REPORT RESUMES

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GUIDE FOR PLANNING COMMUNITY COLLEGE FACILITIES.

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DISCUSSION OF THE PLACE OF PLANNING IN THE DEVELOPMENT OF AN EDUCATIONAL ENVIRONMENT IS FOLLOWED BY CONSIDERATION OF FACTORS RELATED TO SITE (LOCATION, SIZE, MASTER PLANNING, PHYSICAL PROPERTIES, SHAPE, ZONING, PARKING, LIGHTING, ROADS AND WALKS), BUILDINGS (THE BASIC BUILDINGS, CALCULATION OF SPACE NEEDS, STUDENT CAPACITIES, LOCATION ON THE SITE, TRAFFIC PROBLEMS, INNER SPACE DESIGN, EQUIPMENT AND SPECIAL FACILITIES), GENERAL PURPOSE INSTRUCTIONAL AREAS (SURFACES, SEATING, SEMINAR ROOMS, UTILIZATION, NUMBER OF ROOMS, AND SPECIAL CONSIDERATIONS), AND SPECIAL PURPOSE FACILITIES (INSTRUCTIONAL AREAS, ADMINISTRATIVE FACILITIES, STUDENT PERSONNEL FACILITIES, FACULTY AREAS, HEALTH FACILITIES, BOOKSTORE AND LIBRARY). A 356-ITEM CHECKLIST IS INCLUDED AS A SUPPLEMENT. THIS DOCUMENT IS AVAILABLE FOR $2.90 FROM DIVISION OF FIELD STUDIES AND RESEARCH, GRADUATE SCHOOL OF EDUCATION, RUTGERS-THE STATE UNIVERSITY, NEW BRUNSWICK, N.J. (WO)

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GUIDE FOR PLANNING COMMUNITY COLLEGE FACILITIES

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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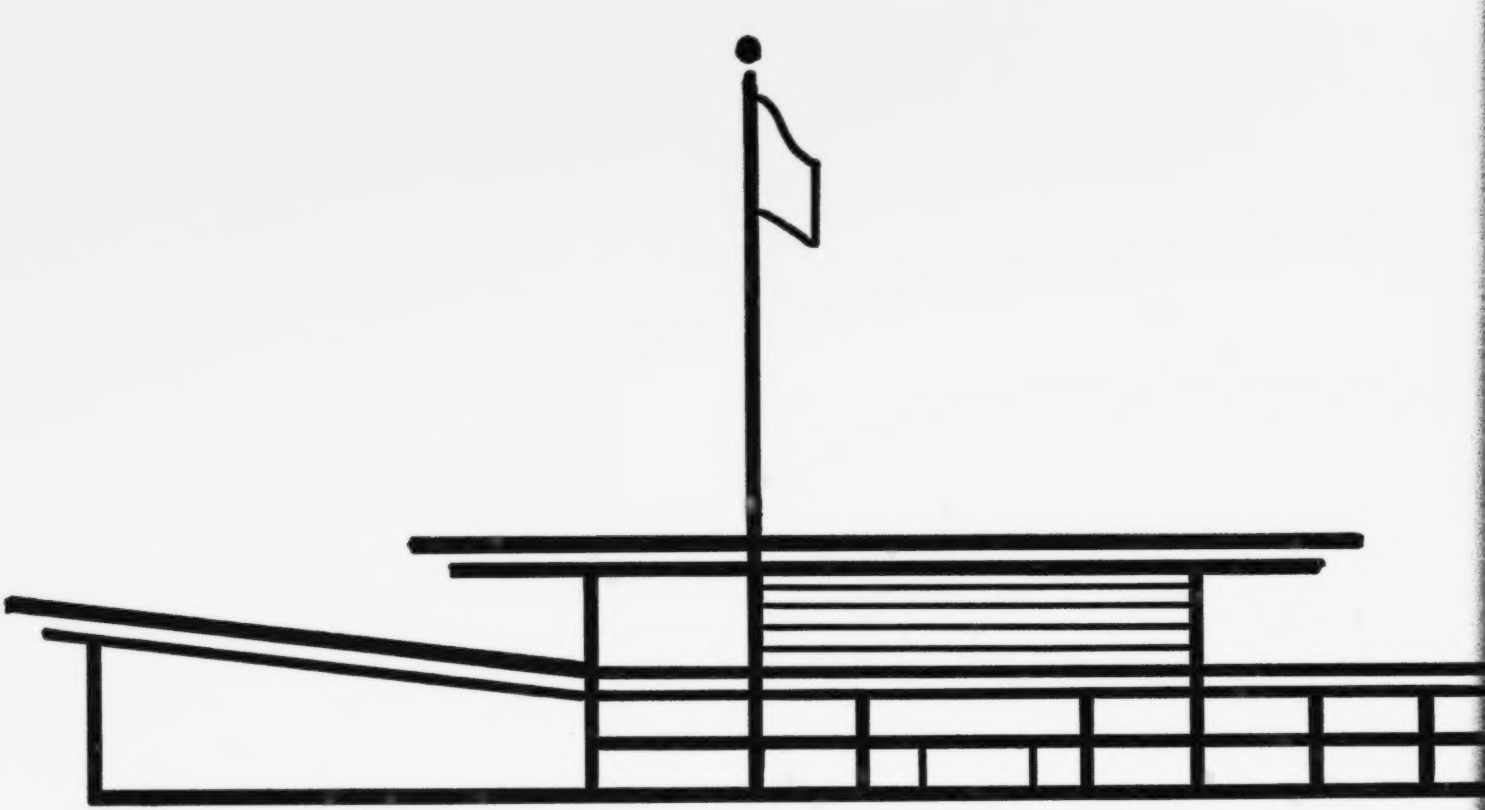

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- study problems of state-wide concern to public education
- train advanced students in areas of particular concern to school administrators.

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GUIDE FOR PLANNING COMMUNITY COLLEGE FACILITIES

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UNIVERSITY OF CALIF.
LOS ANGELES

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THE COMMUNITY COLLEGE FACILITIES PROJECT

Since the community college has its own function, the purpose of the community college facilities project was to provide some of the basic factors necessary for planning **comprehensive** community college facilities. This guide is based on the findings of the project and is intended for use by educators, architects and community college planning committees so that facilities designed are of high caliber and fit the unique role of the community college. The guide is intended only to provide suggestions based on research findings to individuals and groups and not preclude the necessity for local planning based on each community college's distinct program. However, the Guide does recognize that even though each college's program does differ, there are similarities with regard to the planning of facilities that are common to all comprehensive community college plants. One of the objectives of this Guide is to point out some of the commonalities that do exist so that community colleges are planned and built to fill the unique role they have assumed in American education and **not** be designed as elementary schools, high schools, or 4 year colleges.

The Guide was developed by the Division of Field Studies and Research using the following procedure:

(1) The chief state school officer, or his representative in charge of the two-year colleges in each state was contacted to see what progress had been made in the formulation of recommendations for community college facilities.

(2) Professional organizations, foundations, architects, and community college specialists concerned with planning community college facilities were contacted to see what information about community college facilities they had or what steps they had taken to prepare information of this type.

(3) Community college specialists in the United States Office of Education were contacted to see what recommendations they had developed.

(4) Community colleges and authorities recommended by the American Association of Junior Colleges were contacted to see what recommendations they suggested or used to develop their facilities.

(5) A thorough examination of the literature was made to see what recommendations had been proposed.

(6) A checklist of over 300 questions concerning community college facilities was devised from the above sources which itemized the practices being followed and/or recommended, and categories which had to be considered in planning comprehensive community college facilities **(This is contained as a working instrument on the inside cover at the back of the Guide).**

(7) A seven-member group composed of specialists in community college programming, building design, construction, and the role of the community college was organized. The group visited the Community College Planning Center at Stanford University and eight community colleges in California and Michigan recommended by the American Association of Junior Colleges.

(8) The recommendations in the Guide are based on the group's evaluation of the data received from the various states and authorities in the community college field, the checklist, field visits to the community colleges, speeches by the consultants and administrative staff at the colleges, and the group's professional experience.

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THE COMMUNITY COLLEGE: TODAY AND TOMORROW

THE NEED FOR COMMUNITY COLLEGES

The community college is a uniquely American institution. With the growing demand for more opportunities in higher education, it has become an integral part of our educational system. The belief that educational opportunities for all should be broad and continuing, as well as diversified, has accelerated the growth of community colleges, as has the rapid growth of the population and the changing economy.

The population explosion is one of the major reasons why more facilities for higher education are needed. Since 1900 when the population of the United States was approximately 76,000,000, it has risen to the present level of nearly 189,000,000. By 1970, it is estimated that there will be more than 210,000,000. At the same time, the college age (18-24) population also has increased. In 1900, there were 5,000,000 people of college age. That figure jumped to more than 15,000,000 in 1950, stands at about 18,000,000 at the present time and is expected to reach more than 24,000,000 by 1970.

At the present time, approximately 40% of those graduating from high school are attending college. By the end of this decade, more than 50% of the high school graduates will be converging on the nation's facilities for higher education. Just what this means to the nation's colleges and universities can be seen in a prediction made by the federal government: between now and 1972, $19 billion will have to be spent for the construction and development of college campuses in order to accommodate the students expected. States which have not kept pace with the mounting enrollments of the 1950's and 1960's will have to make more strenuous efforts than their far-sighted neighbors to prepare for this influx.

Increased population, however, is not the only reason for the pressure on college campuses. Since the end of World War II, automation has been the most striking characteristic of American industry. It has increased the nation's productivity and at the same time made grave and irreversible changes in the employment picture.

With each step industry takes toward fuller automation, the number of job opportunities that require special skill and training increase. Several community colleges report that 85% of the students completing the technical curricula are being employed in positions that were unknown 15 years ago. At the same time, the employment opportunities for the unskilled are steadily dwindling. The United States Department of Labor points out that since 1910, when the number of white-collar positions was not even half that of blue-collar jobs, the employment picture has changed drastically. At the present time, white-collar jobs are in the lead and by 1970 will be 25% more numerous than blue-collar jobs.

More and more, the solution to the problem of where to train the growing number of students and how to equip them to earn a living in our changing economy has been found in the two-year college. Throughout the United States in recent years, the number of two-year colleges and the number of students enrolled in them have increased rapidly.

In 1963 there were more than 700 two-year colleges, nearly half of which were community colleges. The total enrollment in these institutions, both public and private, was more than 1,000,000 students. At the present time, one of every four students beginning work in higher education is enrolled in a two-year college; by 1970 it is estimated that two, or even three, of every four students will begin post-high school education in a two-year college. In some states this is, or soon will be, the rule.

WHAT IS A COMMUNITY COLLEGE?

The community college is a public two-year institution which offers training beyond the high school. It may be any junior college whose program meets the needs of the community. The **comprehensive** community college usually offers three distinct types of programs.

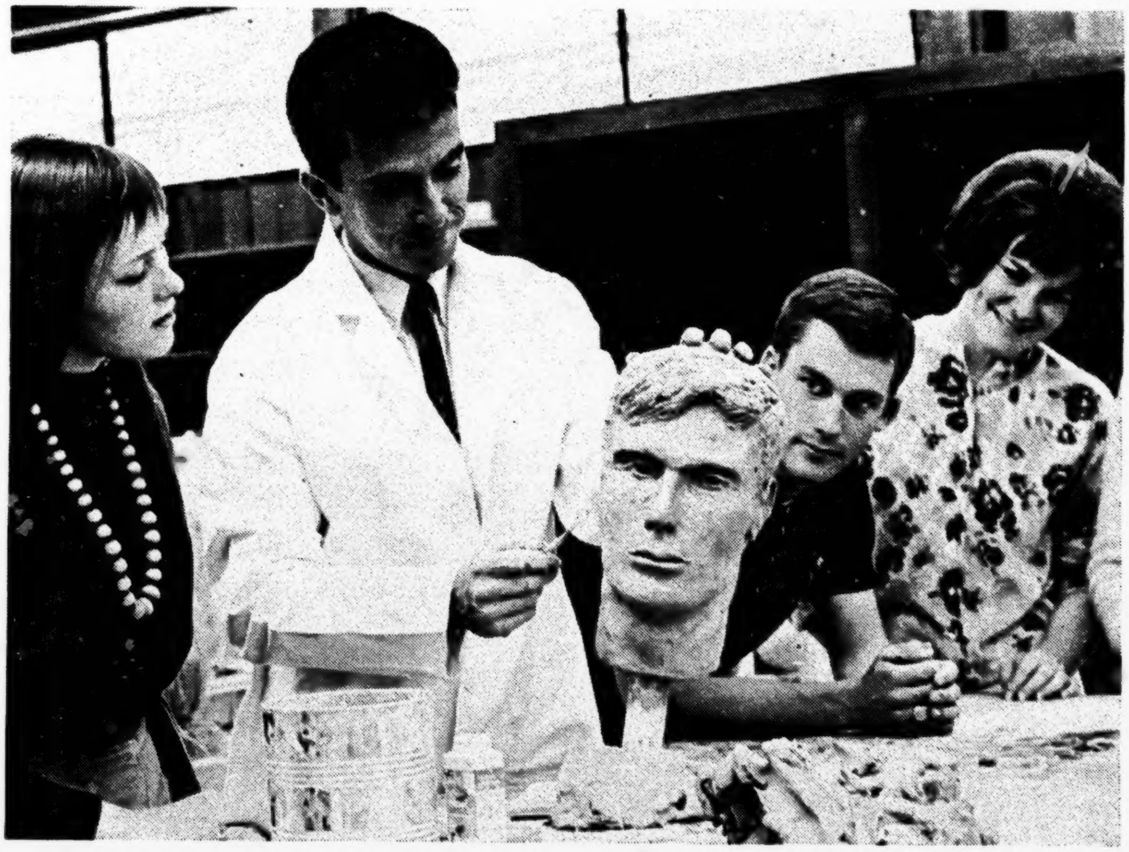
The transfer curricula provide students with pre-professional and/or liberal arts courses for transfer to schools granting the bachelor's degree. In the technical curricula, students are prepared for semi-professional employment in industry, business, health and agriculture. Students who have had technical and vocational training in high school often enroll in this program to increase their competence. Programs in the technical curricula are usually considered terminal since most students seek jobs after graduation. The third type offered—the continuing education program—is designed primarily for adults seeking education beyond high school. It enables them to resume an education that has been interrupted or to take courses in areas of special or cultural interest. The technologically unemployed, seeking retraining for new jobs or those working for promotions might also be enrolled, but their programs might not be much different from those in the technical or transfer curricula.

The community college also serves broader and more general purposes by acting as a center for community service and activities and by providing the facilities and personnel for student guidance. By using its facilities for the presentation of art exhibits, concerts and dramas, the community college can become more truly a part of the community and its cultural life. Through guidance programs, each student is helped to discover his aptitudes, choose a vocation and prepare himself to follow it successfully.

The Community College . . . a school for all ages . . .

WHY PLAN COMMUNITY COLLEGES?

The community college is a unique educational institution with its own special functions. It is neither a high-powered high school nor a watered-down four year-college. To serve its purpose, which is often broader and more diversified than that of the high school or the four-year college, the community college must have facilities commensurate with its goals. There is



. . . a school for learning many skills.

no more justification for expecting a community college to operate permanently in an abandoned high school or outdated college classroom building than there is for expecting a psychiatrist and an orthopedic surgeon to use the same equipment because both are doctors.

No two community colleges are identical. The American Association of Junior Colleges lists two-year institutions with enrollments ranging from less than forty students to more than 25,000 students. It is a basic tenet that facilities must be designed with reference to the educational program. Naturally, because of local needs, the programs offered by community colleges cannot be similar. The technical programs offered by the community college in an urban industrial area will differ quite markedly from those in a rural area. The urban college will probably not serve its community's needs by turning out agricultural specialists.

But despite what may seem like vast differences among community colleges, all of them share some characteristics in common. The primary one is, of course, the instructional function and the facilities related to carrying this out. For this reason, it is possible to draw up guidelines that are **generally** applicable to all colleges. **Generally** is emphasized because no single plan could be flexible enough to cover every situation and meet every need. This intimate knowledge of the locality and its needs can be provided only by the educators, architects and lay committees concerned.

Experience in many states has shown that unless guidelines for the construction of elementary and secondary schools are provided, poor and inadequate facilities are often the result. How wasteful such poorly planned facilities are of public money is all too obvious. If it is possible to make mistakes with the familiar elementary and secondary schools, it is even more likely that there will be errors committed in the planning and building of the less well-known community college. To help prevent such expensive mistakes, as well as to assist in planning a truly functional college, is the purpose of this **Guide.**

THE EDUCATIONAL ENVIRONMENT

IMPORTANCE OF THE EDUCATIONAL ENVIRONMENT

The physical plant of a community college or any educational institution is of major importance in realizing the objectives of the entire school's program. Physical facilities for the community colleges, in addition to being a determining factor in achieving the goals of the instructional program, are vital to establishing an atmosphere of friendly informality between student and faculty. The necessity for a proper educational environment to reach the college's objectives should be kept in mind when planning all phases of the community college physical plant.

Students in community colleges have widely ranging abilities and interests. The desired educational environment of the community college is a basic factor that should be kept in mind by educators, architects and groups in planning any specific space within the community college. It is the purpose of well-designed physical facilities to help both student and community to gain self-realization.

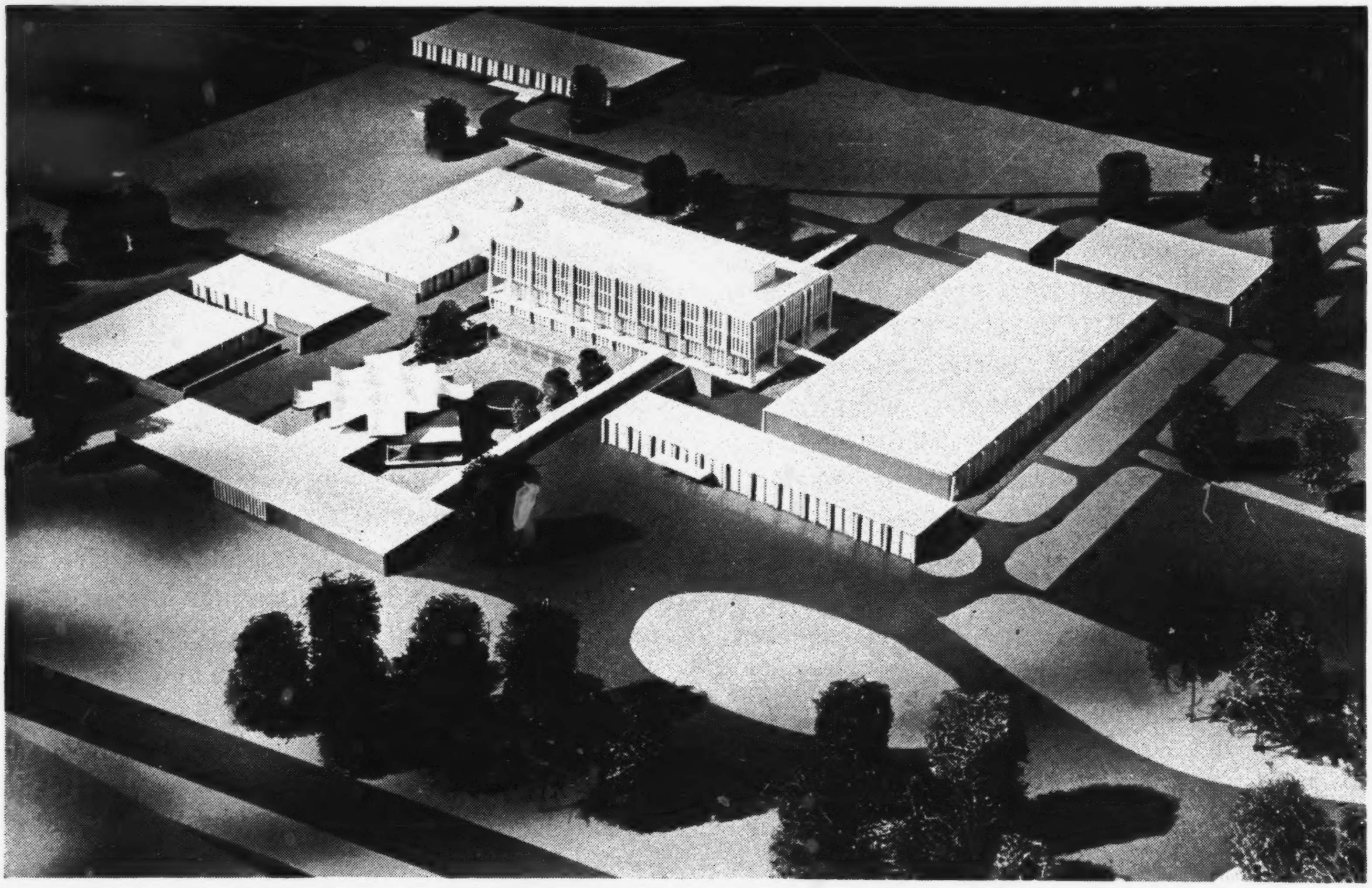
HARMONY BETWEEN COLLEGE AND COMMUNITY

Most areas of our country are rich in tradition. Many facets of our past and future heritage should be considered in designing aesthetic values into the community college campus. A functional steel and glass structure aesthetically beautiful in one area of the country might be a virtual eyesore when placed in another region. In addition to being designed in terms of the instructional program for a specific locality, the community college plant might mirror the aspirations and hallowed traditions of the people of a community.

THE NEED FOR GOOD ARCHITECTURE

New methods of construction have seen the design of new buildings move more and more toward "erector-set" type of architecture. Few will argue with the simplicity of such systems. The architect who by the use of color and accent materials can lend flavor and grace to these clinical systems is the true professional. The architectural motif of the buildings should be left to the creative architect after he has been given the "environmental" direction by all those concerned with planning the new campus. Both architect and educator should see the buildings and other facilities as a series of inter-related learning centers all revolving around the student. Controlling the student's environment will help to develop those objectives for which the community has founded the college.

Facilities should be so unified in their arrangement that they break the barriers between technical and non-technical students. This unity also provides a built-in integration so that students from different programs meet and benefit from each other's contribution. The design of the campus must influence the individual as much as books and teachers to which he is exposed. Everything should have a "sense of place." The proper relation between good architecture, sculpture, landscaping and consciously ordered environment will carry over into later life. Buildings, regardless of use, should be beautiful and utilitarian and, together with properly related supplementary works of art, should provide that atmosphere and environment which are desirable and necessary to the growth of the individual. While it is essential that every advantage be taken of modern constructional advances and new environmental controls, eccentricity of design, rigid geometric patterns and monumentality which deter and restrict the flexibility of the college program, impede the objectives of both the individual and community, and impersonalize the campus should be avoided.



Henry Ford Community College, Dearborn, Michigan

A FRAMEWORK FOR PLANNING

The various types of curricula in a comprehensive community college indicate the necessity for close cooperation of instructional personnel, administrators, citizens committees, boards of trustees, architects, and outside school planning consultants to secure functional facilities that will serve the educational program. Although the final responsibility for planning the community college plant rests with the board of trustees and the college administration, it is essential that both lay and professional assistance be sought to plan this unique type of educational plant.

Although the objectives of the community colleges' curricula are widely recognized and generally accepted, each college has the responsibility for determining its own specific objectives. The degree of emphasis will vary from college to college in accordance with the educational needs of the geographic area it serves.

It should be remembered that in any planning process for community colleges, physical facilities are only an adjunct to the instructional program. Any types of physical facilities that evolve should be based on who is to be taught, what is to be taught, when it is to be taught and how this space can best serve the teaching objectives that are a part of the school's philosophy. Unless the proper physical facilities are constructed, the scope of the program and the operation of the college will be handicapped.

PLANNING THE COMMUNITY COLLEGE SITE

Selecting a site for a proposed community college can be one of the most important decisions in planning. Whether the college is to be located in an urban, suburban or rural setting, its location, size and distinguishing characteristics will influence present and future development as well as the types and aesthetics of the facilities planned. Certain decisions regarding instruction and student policies will even be determined by the site finally selected. The importance of site selection cannot be overemphasized.

SOME PRELIMINARY STEPS

In planning a community college, the step of site selection should be taken only after certain important preliminary steps have been taken by the college planners. It should be noted that those listed below do not include the legal steps required by state and local governments.

1. Formation of a college planning committee.
2. A survey to show the present and future need for a community college within the area.
3. Selection of board of trustees.
4. Hiring of the principal administrator(s) of the college.
5. Determining the programs that are to be offered within the college.
6. Retaining an architect for the college.
7. Determination of the necessary spaces (including site) to house the initial and projected future programs (both indoor and outdoor).
8. Determination of amount of money that is available for the site, initial buildings, staff and operating expenses.

LOCATION OF THE COMMUNITY COLLEGE

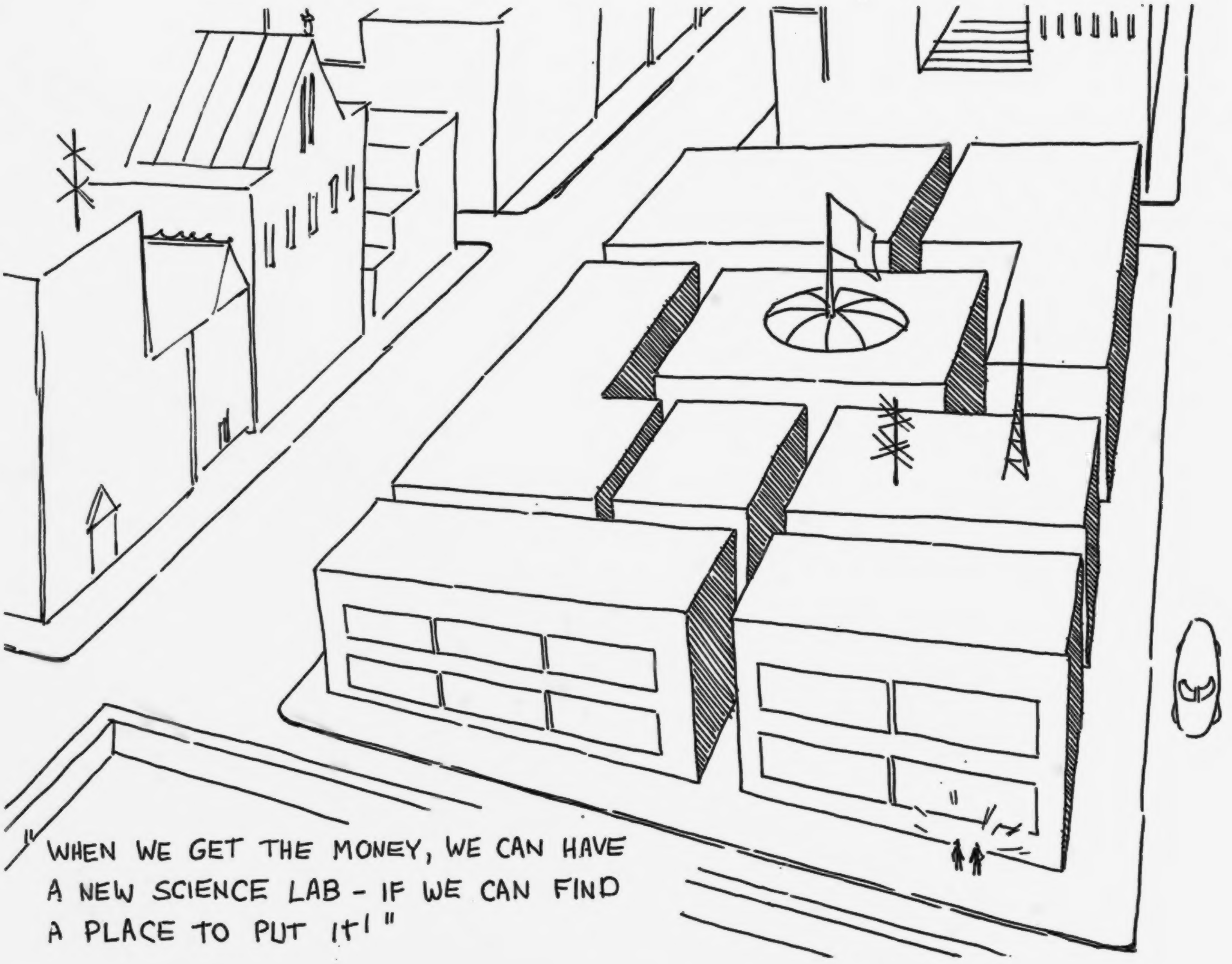
Ideally the community college should be centrally located with reference to the population that it serves and should be accessible to as many people as possible. If possible, travel by car should not exceed one half hour from a student's home. However, while centrality of location is important, it is secondary to the physical and other characteristics of a good site. Before choosing the site, it would be desirable to survey the availability of garbage disposal services, fire and police services. If feasible, service lines should be tied into public utilities and sewage.

SIZE OF THE COMMUNITY COLLEGE SITE

A rule of thumb for determining the size of the campus might be a minimum site of 100 acres plus two acres for every 100 full time students enrolled in excess of 2,500 students. However, a specific formula **cannot** be used to determine the size of a community college site, since each is unique to a proposed college. The amount of land available might also vary in urban, suburban and rural areas. The size of the site selected will influence ultimate enrollment, present and future programs and the services that will be rendered by the college. A mistake many planners make is to underestimate the size of the site. There should be careful planning in any area—whether urban, suburban or rural.

The size of the site should be based on:

1. The maximum size of the student population as determined by sophisticated survey techniques.
2. The maximum size of the student population as determined by the college philosophy.
3. The amount of land available for a community college, since this will vary in urban, suburban and rural areas.
4. The types of facilities required for the instructional, administrative and operational programs of the college. This should be based on the amount of square footage each of these areas requires or will require if planned for expansion.



"WHEN WE GET THE MONEY, WE CAN HAVE A NEW SCIENCE LAB - IF WE CAN FIND A PLACE TO PUT IT!"

NEED FOR A MASTER PLAN

A community college, like any educational institution, should have a master plan for building and site development. A master plan for ultimate campus size, showing the arrangements of all proposed buildings and other facilities, should be considered in the site selection stage. Since many campuses are built in a number of stages, the initial site purchased should be large enough to encompass all of the stages of development. All too often, colleges have built for an initial enrollment of 1,000 pupils on a small site but find that land is not available later or prices of real estate have risen when they start their second phase. The development of an entire site might take as long as twenty-five years or more. In choosing a site, it should be kept in mind that the architectural motif of the buildings, the layout of the campus, the master plan and **even college policy** will be affected by the topography of the site and its relation to the surrounding area.

PHYSICAL PROPERTIES OF THE SITE

Before a site is selected, if at all possible, the difficulties which might be encountered in preparing the site for construction throughout its long-range development should be investigated. Any adverse soil conditions can drastically increase the cost of site preparation and development. Test borings should be made before site preparation estimates are developed and the results should be analyzed before any other steps are taken in site selection.

Usually the favorable results from the analysis of test borings is the signal for other steps in the site selection process. No building should be designed or site selected until the subsoil conditions have been verified by adequate test borings. These should be favorable for footings and foundations, as well as individual sewerage systems where needed. Although many states have much data concerning subsoil conditions of certain regions, this should not preclude the need for "on-site" testing of subsoil conditions. It might prove catastrophic to any building program to skimp on test borings during the early stages of site development. Other topographical features such as contour, drainage and land faults should also be studied during the site selection process. The use of contour maps and models as well as aerial survey techniques for spotting potential adverse conditions (both man-made and natural) should not be overlooked. The community college plant should be planned in relation to the final contours of the site rather than existing ones. Site improvement cost factors such as the need for grading; special footings; sidewalks; curbs; utility lines; erosion control; removal of existing structures, trees and large out-croppings should also be considered.

To complement the building plan, a sound landscaping program is essential. This plan should seek to develop within the shortest possible time, an effective and aesthetically pleasing program which will also provide shelter from disturbing prevailing winds. Ground cover and plantings should be chosen with an eye to beauty and minimum maintenance expense. In selecting a site, acoustical barriers, such as trees, brush, topography, prevailing winds and the anticipated distance of the building complex from the source of noise should be considered.

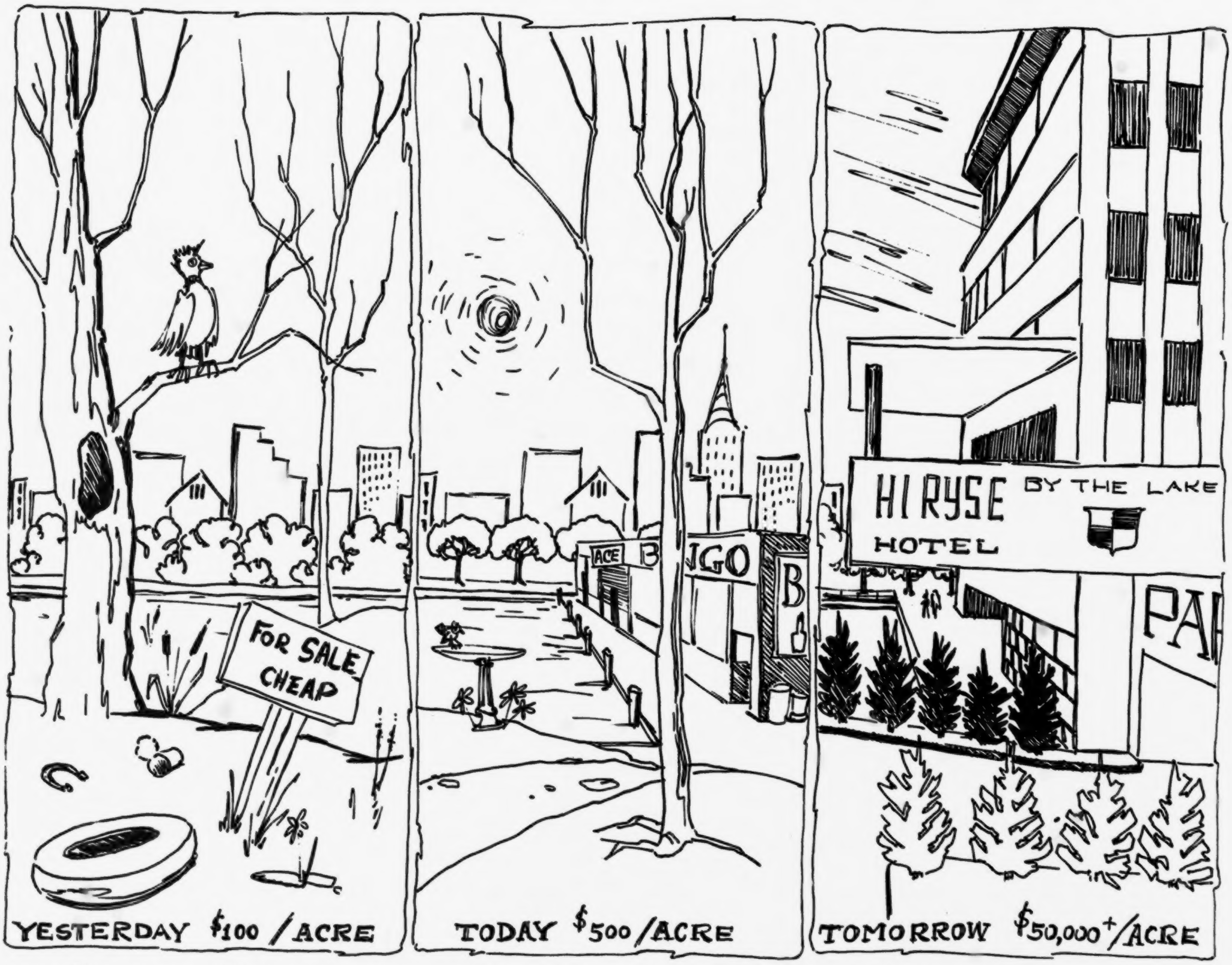
Generally the soil should be fertile enough to support a proper landscape program, but this should not preclude the selection of a site if soil tests show that it can support vegetation with the use of a reasonable amount of topsoil and/or commercial fertilizers. Contracts for grading should require that topsoil that is removed be piled somewhere on the site until it can be used for landscape development. Possibilities of seepage and flooding should be explored before the site is selected and should be factors in its selection. Certain trees and bushes that could be part of general campus landscape development should be fenced off and properly marked so they are not destroyed during campus construction. Analysis of both top and subsoil is highly recommended before sites are finally selected. The cost of improvements to the site should be considered. Such factors as level of land for buildings, the need for special footings, the cost of bringing in good dirt and turf, and the removal of rocks and trees, as well as existing improvements, should be carefully studied.

The topography of the land should be given careful consideration in site selection, and ultimate usage for placement of buildings, streets, walks and landscaping should be planned tentatively on the site before it is selected. A study of land use should be undertaken since large land areas do not necessarily mean a high percentage of utilization. Views, ravines and adjoining hills should be considered as possible obstacles or advantages to campus development.

The percentage of site covered by buildings will depend on the terrain, as well as the size of the site. If the site is limited, cluster-arranged, high-rise structures might be necessary. The percentage figure would vary depending on the size of the site, enrollments and the number and size of buildings; therefore no specific formula would be valid in all cases.

INITIAL AND ULTIMATE SIZE

In working out the master plan for initial size and future growth, the college officials must decide on either of two basic tenets for the ultimate size of a campus. They must decide: (a) to hold enrollments to a set student



capacity at a particular campus, or (b) build additional facilities to house added enrollments when the need arises. Colleges using the first tenet should set an optimum size and a maximum size for campus growth. As the college starts to approach its maximum growth, college officials should start plans for an additional campus. Some colleges following this method have built their entire campus at once. The size of the site will also affect the amount of comprehensiveness in the program. The amount of diversified offerings is somewhat directly proportional to the size of the campus.

It appears that there is a trend toward the first method since it is conducive to systematic growth and lends itself to master plan development. However, any additional sites should be purchased as soon as possible. Land is not only becoming more expensive but it is a rapidly disappearing commodity. Purchasing additional land might be prohibitive in the future.

Real estate values surrounding a college generally go up since community colleges are usually considered good neighbors. This is one of the reasons why the entire site should be purchased at the same time. The establishment of a college in a particular area generally attracts desirable neighbors, thus limiting future site expansion and increasing the value of real property.

HOW TO PROJECT FUTURE SIZE

The future size of site needs can be projected by using the following techniques:

1. The results of survey techniques outlining future enrollments and possible programs.
2. **The use of space adequacy instruments** which can forecast the need for various types of instructional facilities at various

levels of enrollment (example: 1,000, 3,000, 5,000). The space requirements needed at a particular point in time to accommodate a particular program can be computed from the results of these forecasts.

SHAPE OF SITE

Ideally, the shape of a campus of limited area should approximate a rectangle. Generally, however, the shape could vary and should not be a major determining factor in choosing the community college site.

ZONING

Any zoning regulations that will preserve the cultural, social and learning environment of the college should be adopted before the site is selected. Areas zoned for light industry which do not emit noxious odors or smoke, noise and are of the "industrial park" type are considered desirable neighbors for community colleges.

Rights-of-way and easements should definitely be determined before the site is finally selected.

Nearness to utilities, public transportation, and police, fire and garbage disposal services should be considered in choosing the site. Possible highways or jetports with their accompanying noise should be avoided.

PARKING

Ideally, parking lots at a community college should be located on the periphery of the building complex and provision should be made for safe and efficient movement of vehicles on campus roadways. Parking spaces for students should be based on one space per full-time student enrolled, a 1:1 ratio, as a minimum. Colleges located in areas where a high percentage of part-time students attend classes during the day program should increase this ratio. The common pattern in some areas shows that the part-time student who historically has been an evening student often attends classes during the day. Some colleges have used a ratio of 1.5 spaces per full-time student enrolled to provide for this. Some urban areas might consider parking ramps, but these might be prohibitively expensive. A rule-of-thumb figure for determining the amount of space required for parking at a community college is one acre for every 150 cars anticipated.

There should be special parking areas designated for faculty and staff. Special areas for faculty and staff could be attractively fenced off in separate clusters by the use of shrubbery. Entrance to these areas could be controlled by a keyed automatically operated gate. Special parking for visitors should be located in the parking lot nearest the administrative and guidance areas. A figure of one space per 200 full-time equivalent students might be used for computing the number of parking spaces for visitors. However, all community colleges should have a minimum of 20 parking spaces for visitors.

The use of clusters of parking lots, separated by the proper landscaping (trees, shrubs, etc.), could offset the "mass effect" of many cars in the parking area. Athletic fields could be used for parking at registration time since this is a short but hectic period which places great demands on parking facilities. Tennis courts adapted for this use can also be utilized during these periods. Spaces for compact cars should be used only if the parking areas are "policed." Spacing of parking lines would be determined by the architect.

OUTSIDE LIGHTING

In addition to the exteriors of buildings, all parking lots, access roads, and outdoor instructional, recreation and social areas should be illuminated for evening classes and programs. Lights for the parking area might be placed on buildings and/or poles in or adjacent to the lots themselves. Low poles could be used in tree-lined areas to insure adequate lighting. In areas where there are no trees, the lights might be placed higher for more efficient illumination.

ROADS AND WALKS

No building should be directly accessible to private cars and no vehicular roads, other than service roads, should be allowed among the buildings to assure safety of students.

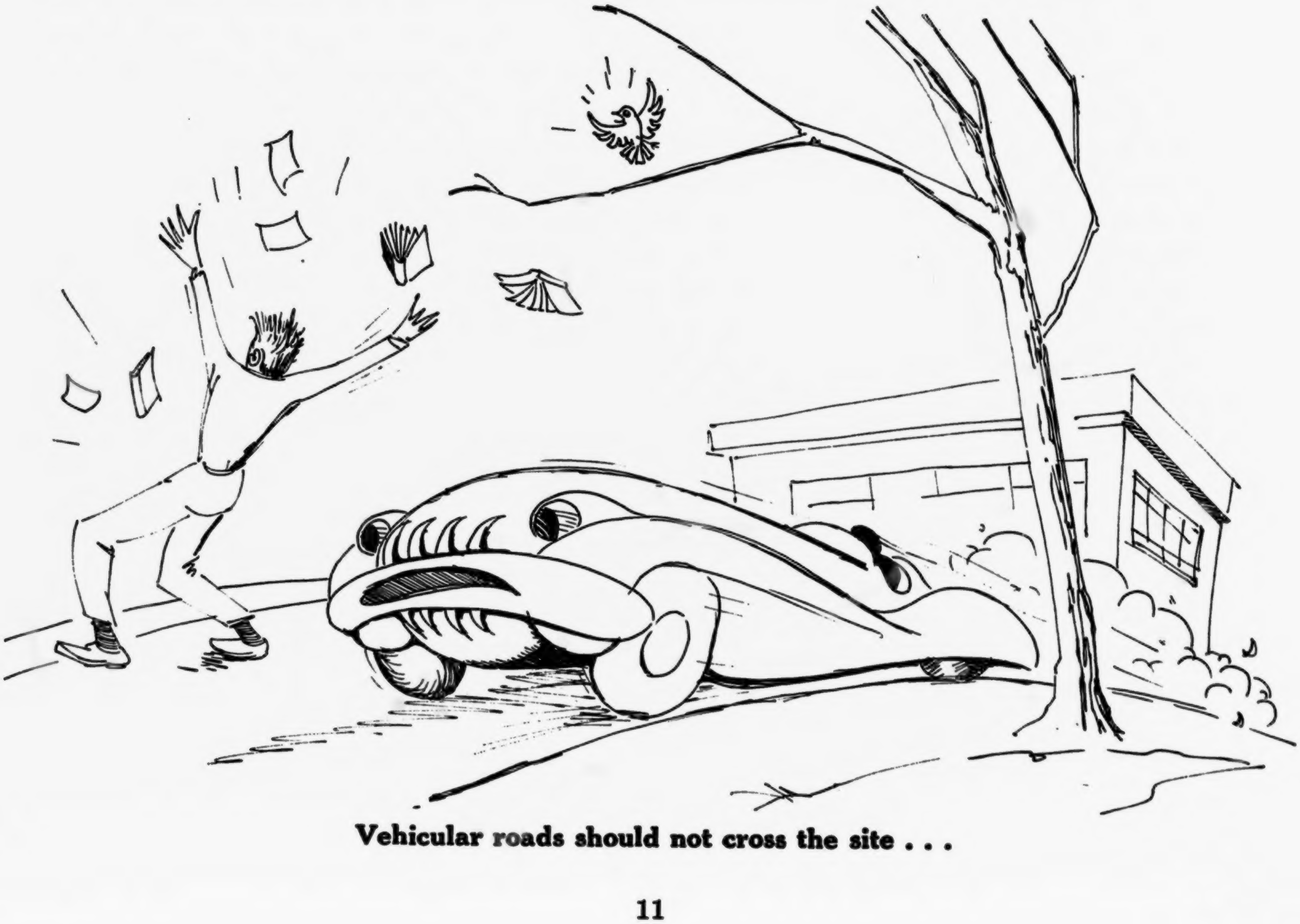
All service roads should be a minimum of ten feet in width and might **generally** be used as student walks within the interior of the site. However, proper controls should be established if they are to be used for this purpose. Access roads should be a minimum of twenty-four feet in width and be wide enough to carry traffic to and from the campus at peak periods. Access roads and walks should be separate and distinct. It is important for the safety of persons that they not serve a dual purpose. It is very desirable to have signs indicating the location of certain facilities on campus for visitors who arrive on foot or by vehicle. These should be illuminated or treated with luminescent paints so they can be seen at night. Student walks should be at least ten feet wide. If possible, they should be direct and convenient. Walks adjacent to buildings should be located to allow for foundation planting to enhance the physical appearance of the campus.

REMEMBER THE BUSES

Since the community college is a commuter school, a shelter should be provided on the periphery of the campus or building area for students using public transportation. Careful consideration should be given to safe as well as convenient loading areas. Public bus transportation utilities should be contacted to request that buses make stops in these areas.

OTHER SITE FACTORS

The location of physical education and recreational areas should be determined by the specific site selected. However, they should be located near the access roads to facilitate parking for athletic events. Essential outdoor areas would be determined by the type of program offered by a particular college.



Vehicular roads should not cross the site . . .

PLANNING COMMUNITY COLLEGE BUILDINGS

The minimum full-time enrollment of a **comprehensive** community college should be 1,000 students (first and second year enrollments). Any enrollment appreciably smaller than this would not justify a comprehensive program within the limits of any realistic cost per pupil figure. The maximum full-time enrollment should be 5,000 students, but an optimum enrollment of 3,500 to 4,000 students would be more desirable. If the personalized nature of the community college is to be retained, there must be a maximum number for which the campus is planned. Many community college personnel feel that there is a tendency for the guidance function and the close teacher-pupil relationship to break down after the maximum of 5,000 has been reached.

BASIC BUILDINGS

The basic buildings on a community college campus will depend on the particular program, but in general the following basic buildings might be found on most comprehensive community college sites:

1. Administrative and guidance center.
2. Classroom and laboratory buildings.
3. Student center.
4. Library.
5. Physical education buildings.

SPACE PER STUDENT

The total amount of pupil space at one college **cannot** be used as a guide at another college. The use of such inappropriate square footages is illogical and unreasonable. They cannot be substituted for genuine evidence of need. Space needs at any particular point in time can be based only on the number, sizes and types of facilities and the planned capacity of such facilities. Two colleges having the same student enrollments would have different space requirements if they had different programs. Facilities at a college stressing a transfer curriculum would vary markedly from one where technical programs were emphasized.

A WAY TO START

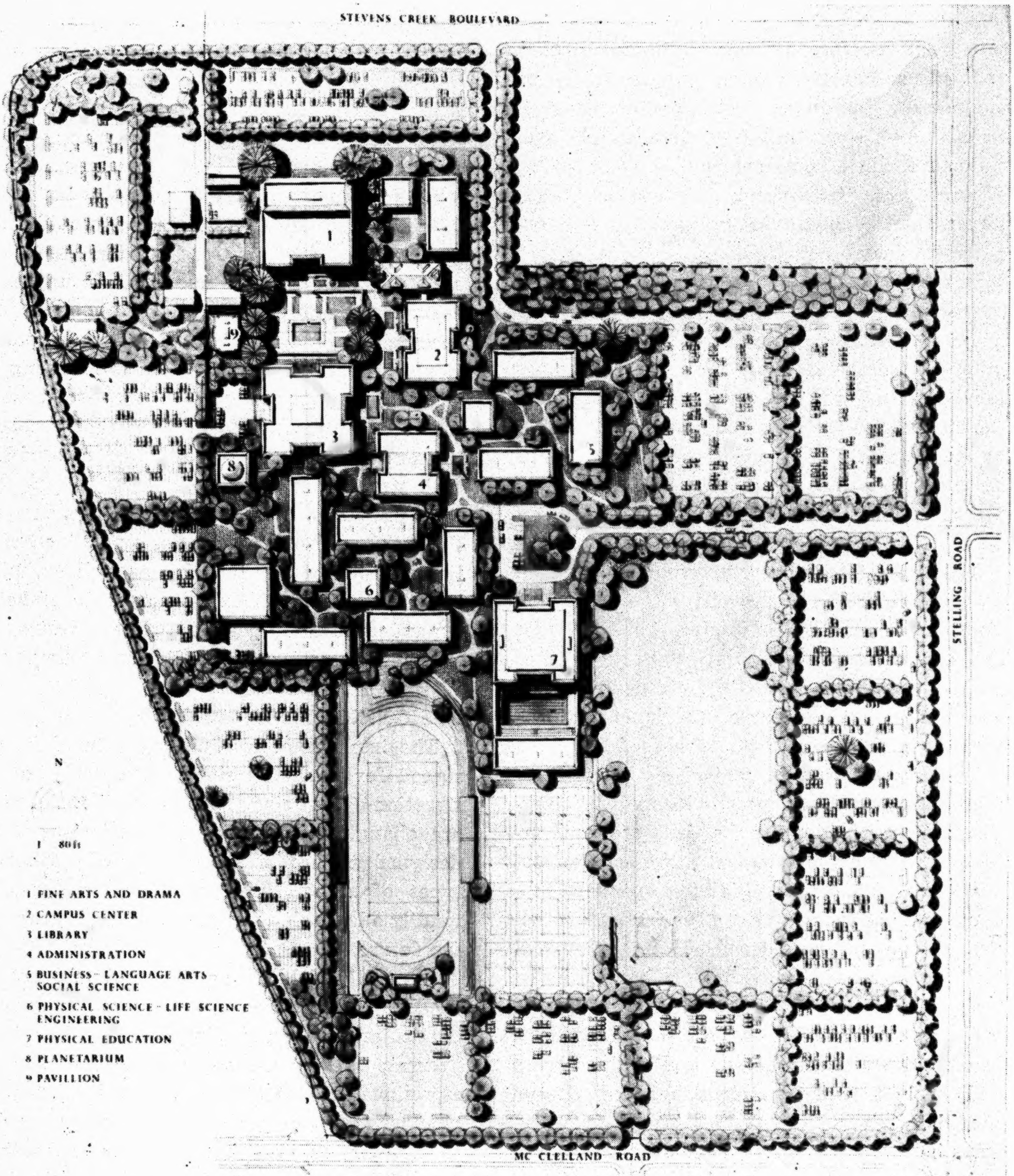
If it is necessary to construct only one or two buildings at a time on a new campus, each structure should be built in terms of its eventual use and should not be planned or built just to house immediate needs. For example, if a science building is constructed to house initially all or nearly all of the college's program at the incipient stage of a new campus, greater economy through more efficient use of future instructional areas will be realized if it is designed as a science facility. Portions of the building not needed at the beginning for science instruction could be used to house the administrative, guidance, library and other service functions as well as for many general and specialized instructional spaces. To accomplish this, service lines would have to be stubbed-in, partitions would have to be erected, laboratory furniture would have to be held up, all of which is more economical and more efficient than erecting a building based on many types of areas that would be used only temporarily.

OUTER DIMENSIONS

The shape of the buildings should be allowed to become irregular, since the inner instructional areas are of primary concern. The selection of the right architect is important since he should be expected to use his creative talents to fit any irregular shape into an aesthetic, functional arrangement.

LOCATION OF FACILITIES ON THE SITE

Spaces should be grouped according to function rather than academic discipline. This method does not give any department false proprie-


STEVENS CREEK BOULEVARD
STELLING ROAD
MC CLELLAND ROAD
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80 ft
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1 FINE ARTS AND DRAMA
2 CAMPUS CENTER
3 LIBRARY
4 ADMINISTRATION
5 BUSINESS - LANGUAGE ARTS SOCIAL SCIENCE
6 PHYSICAL SCIENCE - LIFE SCIENCE ENGINEERING
7 PHYSICAL EDUCATION
8 PLANETARIUM
9 PAVILLION

MASTER SITE DEVELOPMENT PLAN

DE ANZA COLLEGE **FOOTHILL JUNIOR COLLEGE DISTRICT**

tary rights over such areas as classrooms, lecture halls, conference rooms, etc. Laboratory and science centers, rather than chemistry or engineering buildings, are examples of this. Even though some buildings have mainly specialized facilities for a particular department, general areas (classrooms, conference rooms, lecture halls) should be available to any department in the college.

In most cases, it is desirable to keep some instructional facilities, such as field houses, or a building whose activities would disturb the other instructional programs, such as maintenance areas, within the college separate from the other buildings in the complex. There could be zones for placement of certain types of buildings, but this depends on the concept of planning followed.

The type of building plan would depend on the college program as well as the site. Generally, the campus plan is preferable. Colleges in urban areas would have to adapt the type of building plan to the site. (In a highly urbanized area where land is scarce, an "inner-campus" concept might have to be developed.)

The library, student center and administrative areas should be centrally located. It is pertinent that all facilities be designed and arranged to assure convenient movement of students between classes. Walking speed of students and distances between the farthest activities should be considered. Using a normal walking speed of three miles per hour, the distance between each classroom or any part of the campus should not be more than 1,500 feet. The buildings should be adapted to the terrain and student traffic patterns between classes should determine the proper layout of walkways between complexes and buildings to control damage to lawns and landscaping. Areas used for community functions such as the little theater, auditoriums and gymnasiums should be near parking lots to insure ready access.

Care should be taken in planning the orientation of the buildings so that they can be expanded if necessary. It is easy to become "boxed in" if buildings are located too close to each other. Another way to assure the possibility of future expansion (but very expensive) is to build single-storied buildings with proper allowance for load-bearing walls and other conditions needed for future expansion into multi-storied structures. This would raise the expense of the initial structure but would make the campus more adaptable to unpredicted enrollments. If at all possible, buildings designed in this manner should be avoided. However, careful consideration in selecting an adequate campus site with an eye toward future development would somewhat preclude the problem of "boxing in," and a need for such structures.

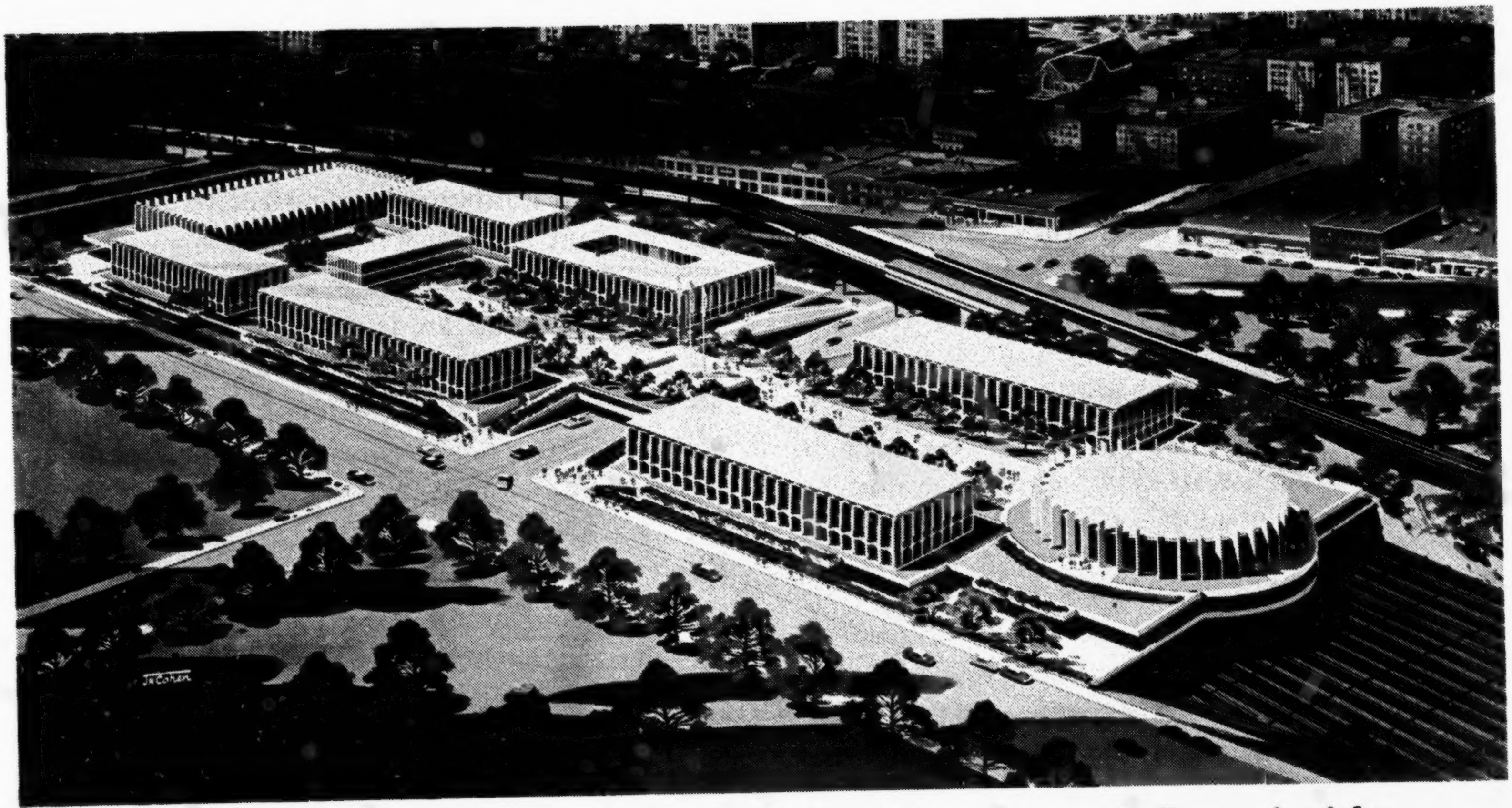
In preparing a master plan of the campus, the architect should design for a possible orderly expansion of any building as well as building groups. These should be capable of being expanded 40 to 50 per cent without destroying the architectural unity of the entire campus.

DESIGNING INNER SPACE

The interiors of all buildings should be designed for flexibility since our theories of instruction (class size, teacher-pupil ratio, etc.) are changing, and building interiors must be designed to accommodate radically different types of areas. Buildings of today must be readily adaptable to unpredictable programs of the future.

Generally, folding partitions should not be used to make space flexible since their use, particularly in instructional areas, has been overrated. Research has shown that few instructional spaces at the college level require changes from one period to another or one day to another, or even one semester to another. The changes that are required usually take place over several years or possibly even decades. Provision should be made for rearranging areas and a few of the ways in which this may be done are listed:

1. Have most inside walls non-load-bearing



Bronx Community College . . . An "Inner Core" Campus . . . built on air rights.

so that they can easily be taken down and the spaces rearranged by college maintenance personnel.

2. If corridor walls are to be load-bearing, make sure classrooms are built wider, so that if expanded, a "telescoping" effect does not take place.
3. Stair towers, vertical service lines, toilet rooms, elevators and other necessary fixed spaces and mechanisms could be grouped in individual towers on the periphery of the buildings. This would make it easier to construct additions to buildings.

THE "INNER CAMPUS" COMMUNITY COLLEGE

The "inner-campus" community college might have to be built in urban areas where land is prohibitively high in cost or not available. On an "inner-campus," the buildings might surround the open core on two, three, or even four sides. Controlling noise that emanates from the surrounding area on an "inner-campus" is an architectural problem, but by the use of proper acoustical materials and by the proper location of certain facilities, it can be reduced or eliminated. One method is to place all the enclosed corridors over the outer walls of the building to act as a "sound shield." The open core could be used as a gathering and resting place for students. It could resemble a patio dotted with benches and attractive pools, as well as trees and shrubs. The placement of recessed small amphitheaters in the "court" could also be highly desirable. Groups planning community colleges in any area (urban, suburban, rural) should consider the spaces between buildings which can be used for many types of student activities.

On an "inner-campus," athletic fields might have to be placed off campus where land is available, but the use of roofs of buildings for some outdoor recreational and physical education activities should not be overlooked.

RAMPS, STAIRS, ETC.

Both ramps and stairs should be considered for the entrance into buildings. Ramps should be placed in most outside areas that require stairs for use by physically handicapped students. If student walks require stairs at any point on the campus, it would be desirable to have ramps adjacent to them. The ramps would be essential to handicapped students using wheelchairs. Since walks might double as service roads, it would be desirable to have ramps wide enough to accommodate service and emergency vehicles.

All buildings having more than one floor (level) should have one or more elevators or escalators. The use of dumbwaiters should be decided by the need for such an apparatus.

INDIVIDUAL TELEPHONES

In addition to the administrative, guidance, secretarial and plant operation offices, each faculty member should have a separate telephone. Telephone pools (assigning only a few phones to a faculty suite) are undesirable. In addition to restricting privacy, they are detrimental to staff morale and impede the school's program. It is unrealistic to believe that any teacher could effectively speak to a distraught student from a telephone placed in a corridor.

In many areas, such as the library, the telephone should be regarded as an essential "working tool." A dial "9" system might be desirable for intra-campus communication. In general, a telephone consultant should be asked to help design a telephone system to meet the needs of the specific community college.

AIR CONDITIONING

All indoor facilities in the community college should be air-conditioned. Since the community college is a twelve-month school, it would not be consistent with good plant planning and human behavior to expect faculty, staff and students to function efficiently within a poor thermal environment. Common sense suggests more effective learning when thermal conditions are comfortable.

In most areas air conditioning includes cleaning, chilling and removing moisture from the air. However, there are some sections of the country where moisture must be added.

TIME AND COMMUNICATIONS

Neither program clocks, bell system nor public address system is necessary. However, it is advisable to have a public address system connecting the guidance-administrative areas with the student center. This does not preclude a separate public address system for use in certain instructional areas such as the community college gymnasium. All indoor instructional, administrative and operational areas, exclusive of corridors, toilet rooms and storage areas, should have clocks.

FENCES

The type of areas to be fenced would depend on the neighborhood and the amount of equipment to be stored outdoors. In addition, certain physical education and recreation activity areas such as tennis courts and stadiums should be fenced.

USEFUL CORRIDORS

Besides use of passageways, the corridors should also be utilized for display and, if wide enough, they could be used for small instructional spaces. Corridors should be regarded as educational space and not mere passageways. In some buildings, such as the student center, benches could be placed in the corridors.

OTHER IDEAS

Student lounges and vending machine areas should be provided only in the student center. This affords students in different fields an opportunity to mingle freely with each other and benefit from the exchange of ideas and interests. Separate lounge and vending machine areas located in classroom buildings tend to attract students from only one or two departments, thus narrowing the range of conversation and the exchange of ideas, an essential facet of higher education.

Public telephones should be placed in all buildings as well as in or near all outdoor areas. Even though most vending machines should be placed in the student center (excepting sanitary napkin dispensers in women's toilet rooms), if the campus does have a separate faculty center, machines should also be placed there.

Since the community college is the social and cultural center of the community, all of the college's instructional and operational (other than administrative and housekeeping) areas should be made available to authorized community organizations.

PLANNING COMMUNITY COLLEGE GENERAL PURPOSE INSTRUCTIONAL AREAS

The community college should have facilities to instruct small and large groups. Listed are some of the major subject areas that can be taught in small and large group instructional areas:

- **English**
- **Science Theory**
- **Economics**
- **Psychology**
- **Geography**
- **Law**
- **Art Theory**
- **History**
- **Education**
- **Engineering Theory**
- **Shop Theory**
- **Speech**
- **Mathematics**
- **Sociology**
- **Anthropology**
- **Foreign Languages**
- **Programming Theory**
- **Health**
- **Political Science**
- **Literature**
- **Business Administration**
- **Business**
- **Music Theory**

SIZE AND CAPACITY OF GENERAL PURPOSE INSTRUCTIONAL AREAS

The ratio of large to small general purpose instructional areas must be determined on the basis of the estimated number of sections in the various subjects. Unless a variety of general purpose instructional spaces is provided, the teacher-pupil ratio will be decided by the capacity of the room rather than by the college's philosophy. One means of providing flexibility is to provide the standard spaces listed. These are intended only as a guideline and might vary from college to college.

	Capacity	Minimum Size
General Classroom	25 student maximum	600 square feet
General Classroom	40 student maximum	800 square feet
General Classroom	75 student maximum	1300 square feet
Lecture Halls	100-125 students	1700 square feet

It should be noted that the philosophy of classroom capacity might change in the future and safeguards should be taken to ensure that areas such as those described above could be enlarged or adapted for some unforeseen use. This can be accomplished by the use of techniques which have already been described under Planning Community College Buildings.

These square footages were approximated by allowing fifteen square feet per student station, plus 175 square feet for the instructor's desk, storage and the area between the front row of seats and the chalkboard.

The type of student seating programmed makes a difference in the size of instructional spaces and should be considered in making these estimates. The type of student seating used in making the above estimates was the tablet arm chair. If chair-desks or chairs and tables were used in a room designed to house 25 students, the size of this space would have to be increased from 600 to 800 square feet.

INSTRUCTIONAL SURFACES

For general purpose instructional areas, a modular display-chalkboard system would be highly desirable since the type of surface could be adjusted to the instructional needs of the moment.

This system could be extremely flexible since the instructional personnel could increase the type of surfaces needed at the moment by replacing chalkboard, pegboard or tackboard surfaces with the type of surface or surfaces needed for the presentation of a particular lesson.

LOCATION OF GENERAL PURPOSE CLASSROOMS

Most general purpose instructional rooms will have to be placed in separate classroom buildings because of their large number. However, as many as possible should be located in the various buildings containing specialized facilities (e.g. engineering center, science center, vocational-technical center, etc.) so that they can be used in conjunction with these areas. There is a growing relationship between certain academic subjects and technical facilities. Disciplines that have historically been taught solely in a general purpose area are beginning to need adjacent technical facilities. Mathematics instruction has been moving into the area of sophisticated data processing equipment; engineering students need not only chemistry, physics and engineering facilities, but are beginning to use technical-vocational facilities (electronics laboratories, sheet metal shop, etc.) as part of their programs.

CLASSROOM SEATING

Classroom seating manufacturers offer a variety of desks and chairs or combinations. Although a variety of chair heights is available, the largest size, usually 18" high, appears to be too small for many of today's college students. A higher chair with a wider seat and back would be desirable. A variety of sizes of seating is needed in each instructional area. If tablet arm chairs are considered, approximately 8-10 percent should have left hand tablet arms.

SEMINAR ROOMS

Small general purpose instructional areas with a maximum capacity of fifteen students should not be programmed since usually few, if any, classes requiring facilities of this type are given at the community college. Instructional rooms of this type would be more appropriate to the four-year college and graduate institutions. If small groups meet, they could use the conference rooms in the library or faculty areas.

UTILIZATION

The college should try to utilize all instructional areas as much as possible. The utilization factor of instructional areas would depend on the number of hours per week that the college is in session. Since many community colleges have a thirty-five hour week, 80% utilization is desirable for general purpose areas, 70-75% for shops and laboratories. In community colleges with a large technical program, these percentages might be reversed.

Any one of several formulas can be used to determine the number of general and special purpose instructional areas. The California Space Adequacy Survey instrument would be desirable if space needs are to be projected for the various types of instructional facilities at various levels of future enrollment (e.g. 1,000, 3,000, 5,000).

NUMBER OF CLASSROOMS

Before it is possible to calculate the number of teaching stations needed, the number of class-hour groups that can successfully be scheduled in one classroom or instructional laboratory must be determined. Normally, general classrooms can be utilized more fully than laboratories or other highly specialized teaching stations, although the opposite is occasionally true. If a school can schedule approximately the same number of classes for each of the class hours of the college day, it can utilize its facilities more fully than the school which has its facilities overcrowded during some hours and under-used during others.

After arriving at a utilization factor, it is also necessary to calculate the total number of hours in the college week during which classes could be scheduled by multiplying the number of days the community college is in session each week by the number of class hours available each day. The number of hours available each day is one less than the number of hours the school is open. (This is based on the assumption that each student and faculty member is not available during the lunch hour.) By staggering lunch hours, the percentage of teaching station use can be increased. The college with a 5-day week, which is open from 8:30 to 5:30 with staggered lunch hours, has, for purposes of effective scheduling, an 8-hour day or a 40-hour week. The number of possible scheduling hours in a week, 40 in this case, multiplied by the utilization factor, gives the number of hours per week that is considered saturated scheduling.

The number of teaching stations required for each subject or course can now be calculated. The basic formula that must be applied to each course is:

$$\frac{\text{number enrolled} \times \text{class hours per week}}{\text{Average class size} \times \text{hours per week per teaching station}} = \text{number of teaching stations}$$

As an illustration of the use of the formula, assume there are 500 students enrolled in a course which meets 3 hours a week. The average class size is to be 25 and each teaching station can be scheduled for 30 hours of use per week.

$$\frac{\text{500 students} \times \text{3 hours}}{\text{25 Students per class per classroom} \times \text{30 hours}} = \text{2 teaching stations}$$

After these calculations have been made for each course, they should be reviewed to see if there is a possibility of using a single teaching station for two or more courses that had been found to need a fractional part of a teaching station.

SPECIAL CONSIDERATIONS

All classrooms should have provisions for closed circuit television, movie projectors and other visual apparatus. With the new types of projection equipment, shades, draperies and venetian blinds are required more to block glare than to darken rooms. Telemation should be considered in the large lecture rooms.

The color treatment, mechanical services and electrical requirements of these rooms should be provided and provisions for library corners in these areas should depend on the instructional program.

PLANNING SPECIAL PURPOSE INSTRUCTIONAL AREAS FOR THE COMMUNITY COLLEGE

Because of the myriad course offerings, the comprehensive community college contains many specialized facilities. The most common may generally be classified as: (1) science and engineering, (2) vocational-technical, (3) business, (4) language, (5) art areas, and (6) home arts. Some types of special purpose instructional areas are:

Art laboratory (ceramics)
Art laboratory (drawing)
Art laboratory (painting)
Art laboratory (sculpture)
Art laboratory (crafts)
Foreign language laboratory
Journalism laboratory
Photography laboratory
Instrumental music room
Choral music room
Accounting room
Bookkeeping room
Typing room
Office practice room
Data processing laboratory
Physical education facilities
Home economics facilities
Biology laboratory
Botany laboratory
Bacteriology laboratory
Anatomy laboratory
Geology laboratory
Zoology laboratory
Physics laboratory
Chemistry laboratory
Organic chemistry laboratory
Surveying laboratory
Drawing laboratory
Engineer testing laboratories
Glass technology laboratories
Telecommunications laboratory

Most of the specialized facilities should be located adjacent to the core of the campus. Care should be taken so that most of these areas are not set at the rear or in a secluded part of the campus. Vocational-technical areas should orbit the central core of the campus, rather than be set off from the rest of the facilities. Care should be taken so that students, staff and the public do not receive the impression that vocational-technical facilities (and students) are second-rate. In general, those specialized facilities might be placed in separate buildings according to function rather than discipline (department). If possible, the departments having specialized facilities that could be shared should be placed near or adjacent to each other. All special purpose instructional areas should have access to an adjacent general purpose classroom. General purpose instructional areas can be used to teach some of the discussion and lecture phases of specialized subjects, but special facilities are required for the laboratory and practical phases of these courses.

Most special purpose instructional facilities can be adapted for the evening program. In fact, vocational-technical facilities in many areas will probably receive their greatest use by evening students.

STUDENT STATIONS

The maximum number of pupil stations in most special purpose instructional areas should be 24. Listed are some exceptions:

	Capacity
Typing rooms	35-40 pupils
Office practice areas	12-15 pupils
Accounting rooms	30 pupils
Language laboratories	45-60 pupils
Planetarium	80-100 pupils
Police science squad room	10-15 pupils

HOW LARGE

Although the amount of square footage for special purpose instructional areas should always remain flexible and will depend on a particular program, the following figures, which do not include storage space or auxiliary areas, are listed as a guide:

	Minimum Size
Science and engineering laboratories	50 square feet per student
Vocational-technical laboratories	150 square feet per student
Fine arts laboratories	50 square feet per student
Art laboratories	50 square feet per student
Language laboratories	30 square feet per student
Home arts	60 square feet per student
Business laboratory (typing, machine accounting)	30 square feet per student
Business laboratory (office practice)	50 square feet per student
Police science photo laboratory	50 square feet per student
Police science squad room	35 square feet per student
Dental and medical assistants laboratory	50 square feet per student
Nursing laboratory	50 square feet per student
Physical education (gymnasium)	110 square feet per student

AUXILIARY SPACES

The types and sizes of the special rooms required to supplement the special purpose areas would be determined by the program but, in general, they are of three types: (1) storage areas, (2) preparation areas, and (3) instructional support areas (e.g. kiln room, balance room, etc.). A figure to determine the square footage of auxiliary space might be:

	Minimum size
Storage areas	10 square feet per student
Storage areas (typing and accounting)	5 square feet per student
Preparation areas	10 square feet per student
Instructional support areas	50 square feet per student
Storage area (planetarium)	1 square foot for each 2 students

Although these rule-of-thumb square footages are given, these figures are based on present programs and are given only as a starting point. Each college should determine its own space needs and change the sizes and layouts of areas as instructional needs change.

INSTRUCTIONAL SURFACES

Most science, engineering and vocational-technical laboratories should have a sliding chalkboard. Art laboratories could have most of their walls faced with a washable tackboard for display of work. A modular display-chalkboard system would be most desirable, since the amount of display and writing surfaces could be adjusted to the instructional needs of the moment.

LIGHTING

In general, ceiling heights, with the exception of the planetarium and some physical education areas, might be the same height in most instructional areas.

Good lighting in all areas is very essential not only for the instructional program but for the health of faculty and students. The latest recommendations of the National Council on Schoolhouse Construction for special types of instructional areas might be observed. All lighting should be capable of rearrangement as instructional areas are rearranged to suit the program. A modular system of lighting would be advisable for this purpose. Machine shops should be equipped with individual lights that may be independently directed on the work. Work benches in electronics laboratories should also be equipped with individual lights that may be directed into a chassis. If live work is used in the auto shop, overhead drop cords should be used to keep electric cords off the floor. All machines should have special lighting over the operator's area. Provisions should be made for the instructor to turn off all electrical services, except the lighting, with one master switch in case of an emergency. All machinery should be equipped with magnetic switches. If windowless buildings are programmed, a separate emergency lighting system should be installed.

SPECIAL FEATURES

Like all areas in the community college, the physical education facilities should also be planned in terms of program. Some authorities feel that these facilities should be comparable to those of a four-year college having approximately the same size (full-time) student body. However, it should be realized that if mandatory physical education courses are required in the first and/or second year at the community college, more teaching stations would have to be considered. Since many physical education activities are co-ed and geared to life-long physical and recreational activities such facilities as golf courses, bowling alleys, swimming pools, tennis courts and squash courts should not be overlooked.

Most community colleges provide gymnasiums, running tracks and play fields in addition to the necessary auxiliary facilities such as locker rooms, equipment rooms, spectator seating and a variety of equipment, to the extent required for the objectives of the college. However, some colleges have found that fixed outdoor grandstands are rarely fully occupied and since the space (and money) required for them can also be used for other purposes, whether to provide them or not should be carefully considered. Some community colleges either substitute movable grandstands for permanent ones or rely solely on indoor telescoping bleachers for spectator seating. Care should be taken so that intercollegiate sports do not determine the types of physical education facilities planned.

Most business education areas in the community college should be similar to those found at the high school level but office practice and office machine rooms should have furniture and equipment comparable to those found in large office areas in industry.

Music areas could parallel those of the large high school. There would be little significant difference between choral and instrumental music rooms in the community college and high school. However, the need for this type of teaching station would depend on the college's program.

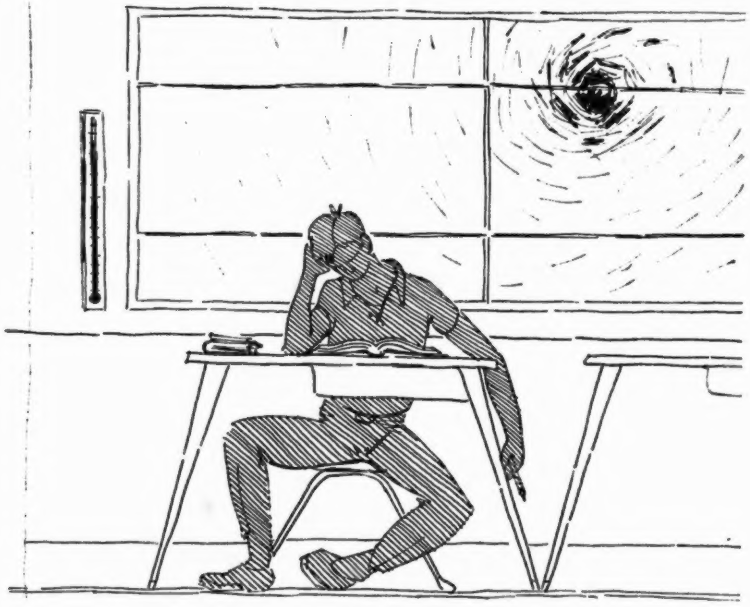
In addition to being extremely flexible so that adjustments can easily be made to adapt them to a changing program, art laboratories should have provisions for natural lighting. Although many facilities might be designed with limited window areas because of air conditioning considerations, all art areas, with the exception of dark rooms and storage spaces, should have natural lighting so that colors do not become distorted as is the case when artificial lighting is used alone.

OTHER CONSIDERATIONS

Special-sized doors with special hardware will be needed in some laboratories in order to bring in and remove equipment, supplies and some instructional materials. Most science, engineering and vocational-technical areas should have more than one exit. Laboratories located on ground level should have an exterior exit.

All essential services (electricity, gas, etc.) required for the programs should be available. There should also be provisions for the installation of services which may become essential because of changes in the instructional program. Although service lines have historically been imbedded in the floor and walls, it should be possible to install additional lines after the building is completed. Architects should be instructed to run service lines between outer walls and between floors. Walls and floors should be designed so that additional lines can be added at any time. Removable panels should be placed at intervals, so that these additional services can be brought through to laboratory desks or other surfaces whenever a major change is needed. Initially, this type of installation is very expensive, but it is one of the few ways to provide for programs which will probably change. It is far less expensive than replacing facilities which **cannot** be used because they have become instructionally obsolete.

Some school planners say that air conditioning has little effect on learning . . .



"NOW, WE SQUARE THE HYPOTENUSE AND DETERMINE THE . . ."

All furniture that is placed in a special purpose instructional area should be movable or semi-fixed. No furniture should be permanently fixed so that it could not be moved to suit possible changes in the instructional program.

There should be provisions for individual lockers near specialized facilities for student projects and personal items. Locker areas near these facilities would enable students to store bulky materials so that they would not have to carry them home or to other parts of the campus.

All areas should have racks or hooks for coats and hats. However, these should not be placed within laboratories or shops where machinery and/or volatiles are used.

All special purpose instructional areas should have "built-in" acoustical properties so that the program is not distrubed by sound (e.g. if a classroom is near a shop, measures should be taken to restrict disturbing noise).

There should be separate cabinets or storage for resource materials in all special purpose instructional areas. Drinking fountains and toilet rooms should be located near all instructional areas. Most special instructional areas should have washroom provisions.

Technical-vocational facilities besides being excellent instructional areas should also be models for local industry to copy. If possible, these areas should provide the lead for local industry to follow.

THE DRAMA DEPARTMENT

LOCATION

The drama department should be adjacent to a few general purpose instructional areas, as well as to the special purpose areas of the fine arts and music departments. Proximity to the paint and crafts laboratories enables the drama and music departments to .use these areas as supplements to facilities needed for the performing arts.

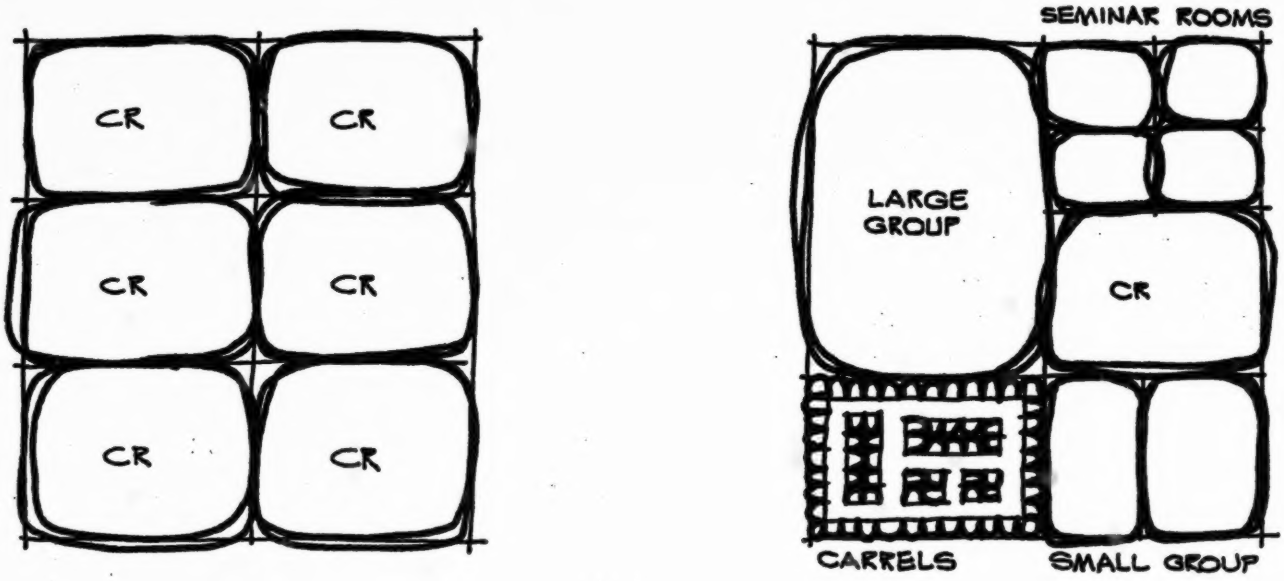
AUDITORIUM VERSUS LITTLE THEATER

The community college could have an auditorium but, in its place, it is recommended that there be one or more little theaters. These should be equipped with theater-type seating and be considered semi-professional in scope. These should have seating capacities of not more than 300-400 students each and should be suitable for instructional purposes. Historically, large auditoriums have had poorer utilization since they are used to their full capacity only a few times a week. A divisible auditorium which can be divided into smaller instructional areas might be explored. Little theater(s) can be used for assembly programs, thus eliminating the need for a separate auditorium. Any large gathering such as commencement exercises could use the college gymnasium where a portable open stage can be erected. If possible, the little theater(s) should also be adjacent to the fine arts center or near other fine arts facilities.

The drama department should also have the following minimum facilities: (1) stage craft workship, (2) property storage room, (3) dressing rooms with accompanying toilet and shower, and (4) wardrobe room.

The types and sizes of stages that are planned for the community college should be determined by the program. The three types of stages which might be included are: (1) the platform or open stage, (2) the proscenium or picture frame stage, and (3) the arena stage or theater-in-the-round stage. Since the stage areas would be used for instructional purposes, they should be equipped properly by being semi-professional in scope.

An outdoor amphitheater might also prove useful to the drama department's program.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SEMINAR ROOMS
LARGE GROUP
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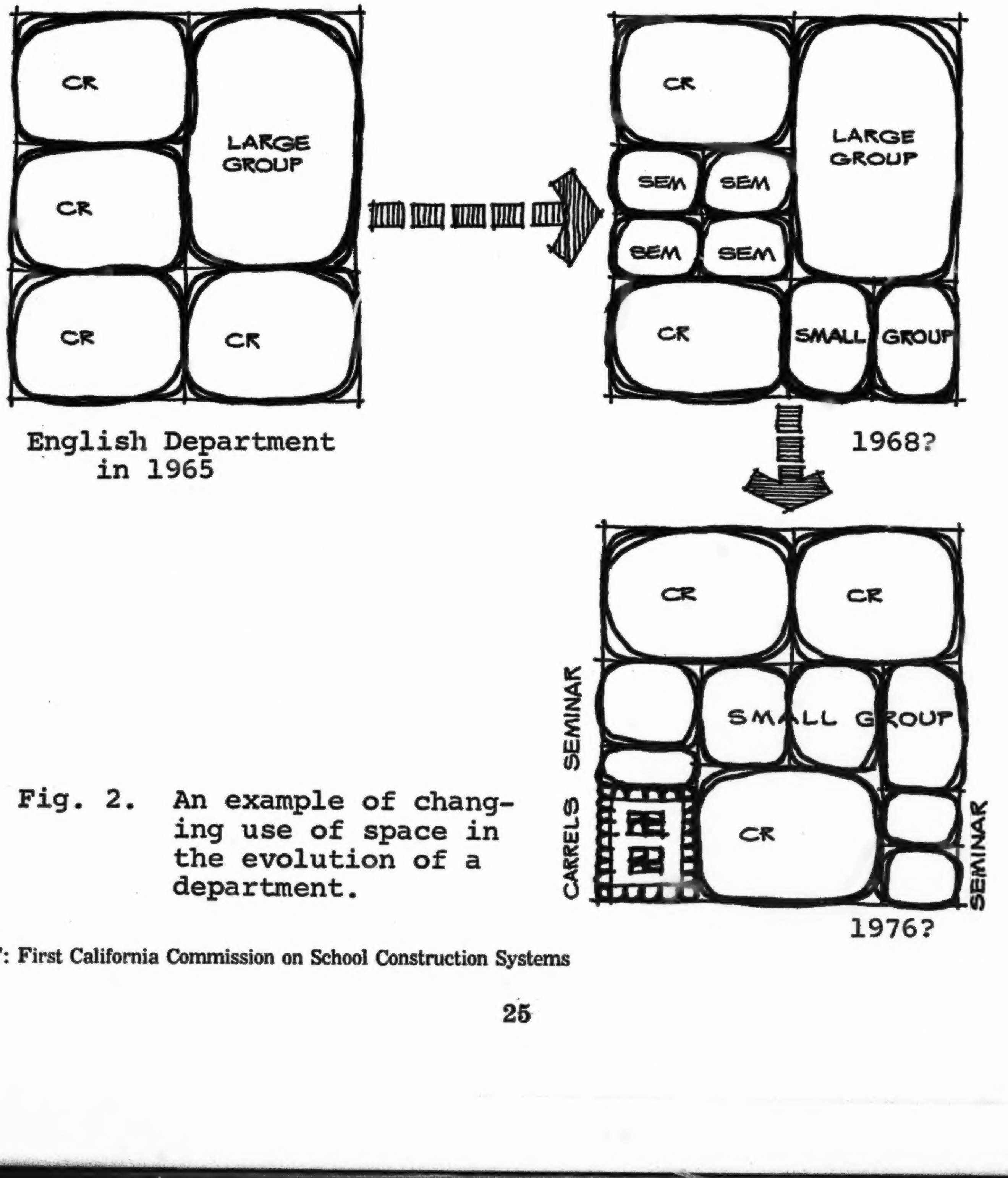
CARRELS
SMALL GROUP

Fig. 1. Two different ways to arrange space to form an English Department.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SEMINAR

English Department in 1965

1968?

1976?

Fig. 2. An example of changing use of space in the evolution of a department.

CREDIT: First California Commission on School Construction Systems

PLANNING THE COMMUNITY COLLEGE STUDENT CENTER

LOCATION AND FACILITIES

The student center is to be regarded as the social hub of the campus and should be centrally located. It should be classified as the focal point of all student activities that are part of the community college's program. As a minimum, the student center should have the following types of areas:

1. Student lounges
2. Snack bar, student cafeteria and vending machine area
3. Cafeteria service areas
4. Student government and activity offices
5. Student store
6. Display areas
7. Supplemental storage areas

GROWTH

All areas should be designed with the maximum growth of the college in mind, but special attention should be given to the food service areas since in many community colleges these areas have been designed too small. Care should be taken so that all areas be designed for easy expansion if the need arises. A recent survey of 140 four-year colleges disclosed that facilities are becoming larger and more complete than in the past; and they are being used for more community service activities.

LOUNGE AND VENDING AREAS

All student lounges and all vending machines should be located in the student center. This permits students with different subject fields and interests to mingle freely and benefit from exchange of ideas and interests. This is one method of "building in" a control which seeks to insure one of the objectives of higher education. A central location for all vending machines is another method of trying to draw all students together. It would be detrimental to the overall concept of developing a commonality of understanding by locating vending machines at various points throughout the campus.

FOOD SERVICES, DISPLAYS, LOUNGES, RECREATION AREAS

The snack bar and cafeteria hot tray areas should be separate. Combining these areas impedes their functions and makes service difficult. Relatively few students at a community college eat a hot meal, although this type of service is desirable. For every student using the hot tray area, there will be four to five students using snack bar facilities. For this reason, the snack bar services should be large and be laid out for efficient use. Both snack bar and cafeteria services should be capable of serving large numbers of students, especially at peak periods. A '"scramble type" of hot tray service area is the most efficient. This concept might even be applicable to the snack bar, since it breaks down the need for students to queue up in long lines. If the area is laid out and works efficiently, there is no reason for the faculty not to use it if they do not have separate dining facilities.

It would be more desirable to have faculty cafeteria and dining facilities in a separate building but, if this is not possible, they should have a separate dining area within the student center. The student cafeteria should be one of the few areas on campus that can be partitioned into smaller areas by the use of folding partitions. These smaller areas could be used separately as small group dining and/or meeting rooms by students, faculty and staff, as well as community organizations.

There should be separate tackboard areas in the student center to post notices concerning student activities, as well as display cases for college awards.

Lounge as well as cafeteria furniture should be grouped in small clusters so as to give a feeling of individual groups. A "mass effect" in laying out these areas should be avoided.

The provision of game and television rooms and music listening booths would depend on the needs of the student. However, the student center should be wired for closed and open circuit television. Music listening booths for small groups should be wired to the audio-visual center in the library, so that requests can be "piped" into these areas.

The student center should be primarily designed for student activities. However, this does not preclude the possibility of students studying there if they so desire.

There should be provision for easy access to the student center by needed services (delivery of supplies to the cafeteria, bookstore, etc.).

OFFICES

Administration offices in the student center should be held to a minimum since, theoretically, this should be classified, more than any other facility within the college, as the "students' building." The following administrative offices and related functional facilities would usually be located in the student center:

1. The student center manager
2. The dean of student activities
3. The cafeteria-snack bar manager
4. The bookstore manager

INSTRUCTIONAL ASPECT

Although the student center should be regarded as the hub of student activities, it can be used for part of the instructional program. For example, the food service facilities can be used to train students in some areas of hotel and restaurant management and the bookstore can be used within the distributive education program. A general purpose instructional area for use with such programs could be provided. This area could also be used as a general meeting room for other college-community functions.

Student mail boxes or lockers should not be located in the student center. However, lockers and washroom facilities should be provided for cafeteria personnel, whether employees or students working in an area of the instructional program related to food services.

OTHER CONSIDERATIONS

There should be appropriate storage facilities for the food service, bookstore and office functions of the student center. There should also be adequate space to store cafeteria furniture when this area must be cleared for student activities such as dances, meetings, etc.

Some other factors which should be considered in planning this area are:

1. Proper acoustical treatment so that areas can be used efficiently for their designed function.
2. Air conditioning.
3. Provision for more square footage for food service areas if they are to be used for instruction.
4. Use of outside patios as adjuncts to the snack bar and cafeteria.
5. A public address system.
6. Lounge area for cafeteria personnel.
7. Carpeting for the public (student) areas.

PLANNING ADMINISTRATIVE FACILITIES

ACCESSIBILITY

The community college administrative facilities should be located near the center of the campus. This location is for the "service of the many" since it is more desirable to have it immediately accessible to the persons using the campus than for the occasional visitor. Historically, most administrative areas have been located near the periphery of the campus because of nearness to parking. However, this location, while helpful to the campus visitor, has not made administrative facilities readily accessible to the largest groups who use them: faculty, staff and students. In most cases, visitors parking will only be a short and possibly pleasant walking distance from the administrative areas.

"INNER MASTER PLANNING"

A major consideration in planning the administrative area for the community college is provision for future expansion of the building and internal rearrangement of areas. If loft type of construction is programmed, these "inner" changes, when needed, can easily be realized. With these structural considerations, non-load-bearing partitions can easily be dismantled and rearranged to suit new conditions. It would be advisable to have a master plan of inner arrangements which indicate how areas might be arranged at various levels of the college's growth. However, the number of administrative spaces cannot be properly determined by the enrollment of the college. The number of offices and related spaces needed at a particular point in time can be calculated by using the organizational chart of the college. Areas for supporting additional staff and administrative services could be scheduled on this "inner master plan."

The rearrangement of these areas is extremely important because, like the academic program, administrative relationships change as a community college develops; and curricular and student population changes serve to modify administrative services.

It might also be feasible to have a master plan for rearrangement and future use of all inside areas within the community college. This plan could be an important component of the master plan for development of the entire college plant.

ADMINISTRATIVE OFFICES AND SUITES

The number and size of individual offices for administrators would depend largely on the administrative organization and philosophy of the college. However, no office within the entire college should be less than 100 square feet. All key administrative personnel should have their own offices and, in some cases, their own suites. The sizes of these spaces would depend on their function. However, most key administrators (president, deans, director of community services, director of the evening program, etc.) should have offices with lounge areas for visitors. If possible, these offices should also have individual toilet areas.

The college president's office should be located near the center of the administrative suite so that he is centrally located with respect to key staff members. Each key administrator should have a separate or shared conference room located adjacent to his own area. In addition, there should be a large conference room for meetings of the board of trustees and staff, with provisions for seating twenty to thirty additional persons.

Generally, private offices with accompanying spaces for private secretaries should be programmed for the college president, most of the deans, the college registrar, bursar, and directors of the day, evening and community services program. However, this would vary depending on the community college's table of organization. In most cases, the dean of student activities should be located in the student center.

OTHER FACILITIES

The registration functions of the college should be housed in the administrative area. Provision should be made for systematic registration procedures. This can be accomplished by the use of "bank teller" type openings in a corridor wall and quasi-permanent counters placed at appropriate intervals. These areas should be set up so that traffic flows freely and that registration procedures become less complicated. In the past, many community colleges have underestimated the size of these facilities and have had to improvise their arrangements for registration.

Other facilities most commonly found in administrative areas include: (1) secretarial areas (both pool and individual types); (2) waiting areas; (3) telephone switchboard areas; (4) toilet facilities for administrative and staff personnel; (5) vault; (6) mail room; and (7) supplemental storage areas. Office pool areas should be based on at least fifty square feet per clerical worker, not including storage. The central campus duplicating, data processing and micro-filming functions should be housed in the administrative facilities and planned for initial and future needs. Attention should be given to future data processing functions and to ultimate storage needs. Many community colleges planned during the last decade have underestimated the amount of space needed in the administrative areas. These deficiencies have been most notable in the admissions, business and record storage areas.

Areas that students will be using should be the most accessible. A central waiting area for the administrative suite should be accessible to students, visitors and staff.

PROVISIONS FOR EVENING USE

The administrative areas for the evening program should be self-contained and should be able to operate as a unit when other administrative offices are closed. It is important that the size and services of this area not be underestimated. Telephone services for the evening program should be available not only for this area but for other facilities such as faculty offices, the library, student center areas and essential operational services of the community college plant.

AN IMPORTANT POINT

In some areas of the United States, many community colleges are built to serve a wide region. The tremendous growth of the community college movement has seen many areas support two or more community colleges. If student population forecasts indicate that there will be more than one campus, a decision might have to be made as to whether certain business functions of the community college should be "pooled" on one of the campuses.

PLANNING THE COMMUNITY COLLEGE GUIDANCE AREAS

LOCATION AND ACCESSIBILITY

The community college guidance center should be located in or directly adjacent to the college administrative areas. Access to the guidance area should not necessitate students' going through the other areas of the administrative facilities. Ease of access and a friendly, cheerful environment should be created so that a stigma is not attached to the area.

THE GUIDANCE CENTER

The guidance center is actually a service area, since most of the actual counseling should take place in faculty offices. In essence, the entire faculty in the community college is part of the guidance department. This maintains the close personal relationship between student and teacher that has made the community college movement so successful. Since the faculty is really an adjunct to the guidance department, each member should have a separate office. These should be a minimum of 100 square feet of space and have provisions for seating at least two or three visitors.

As a minimum, the guidance "core" should have the following types of spaces: (1) individual coordinators' and other specialists' offices; (2) conference-testing rooms; (3) waiting-library area; (4) reception area; (5) secretarial areas; and (6) supplemental storage and record areas.

Specialists' (psychologist, social worker, etc.) and coordinators' offices should be soundproofed to insure privacy and should be large enough to seat three or four visitors comfortably.

All conference areas for counseling (including faculty offices) should be cheerful and be somewhat soundproof. It is difficult for personal and confidential information to be exchanged between students and counselors if privacy is not guaranteed.

The importance of properly designed guidance areas cannot be overemphasized. In the community college there are many students who are deciding for the first time in which direction they are setting their goals. It is here that many will decide to terminate their education or change their goals. It is one of the most important times for positive guidance.

PLANNING THE COMMUNITY COLLEGE FACULTY AREAS

LOCATION AND ADVANTAGES

If possible, all faculty offices should be located in a separate facility on the community college campus. This is considered desirable since: (1) it allows faculty members to mingle and share their interests; (2) it discourages break-up of the faculty into departmental or other types of cliques and the subsequent loss of overall morale; (3) lounges and work facilities can be located more practically and economically; (4) it prevents faculty from supervising instruction, particularly in laboratory areas, from their offices. The faculty center could be used to house all faculty offices, lounges, work areas and food service facilities. There are other advantages to a separate faculty center. This facility enables administrators and faculty members to meet informally in the lounges and dining areas. A spirit of friendliness and understanding, which is important to the welfare of the community college should develop. Actually, it would make communication better between faculty and administration. It would also make mail and other servicing of the faculty easier.

Department libraries for the faculty should be located in a separate area within the community college library. It is therefore desirable to have the faculty center located near the library. Locating the faculty center near the hub of the campus would make it easily accessible from the surrounding instructional buildings.

CONSIDERATIONS IN DESIGN

In designing the faculty center, the following should be considered: (1) flexibility for rearrangement of space and potential for expansion, as well as the important aesthetic and conditioning factors that are considered in designing other areas within the plant; (2) appropriate space for storage, waiting areas and clerical personnel; and (3) direct access to the faculty office suites, not through other service areas of the faculty center.

PART-TIME STAFF

It would be desirable to have office space for part-time (evening and day) instructional staff. Assigning them an office would depend on the number of courses a part-time faculty member taught and the availability of space. However, if office space is not available, individual mail boxes should be assigned to part-time faculty members.

FACULTY OFFICES

All faculty members should have their own offices. Care should be taken so that faculty offices are designed solely for individual faculty members. This is essential if the faculty is to properly counsel students. Each office should have adequate acoustical treatment so that conferences can be held in privacy. Each office should have space for a desk and chair, as well as comfortable seating for two or more visitors. A file cabinet for guidance records and for personal instructional materials should be provided. It would also be advisable to equip each area with a bookcase which has adjustable shelving. If possible, a small chalkboard and tackboard should be located in each office. As a rule-of-thumb figure: each individual office should be a minimum of one hundred square feet. There should be little or no difference between faculty members' and department heads' offices. Faculty members needing space for group meetings could use the small conference rooms which should be located in or near each department's suite. In addition to those provided in the faculty center, most buildings should have separate toilet facilities for faculty members.

STUDENT HEALTH FACILITIES

Depending on the philosophy of the college, the health suite can be located adjacent to the guidance center or within the instructional areas required for the nursing program.

It should have the following minimum areas: (1) an examining room; (2) dressing cubicles; (3) nurses' offices; (4) first aid room; (5) rest areas with adjoining toilets; and (6) waiting and storage facilities. Sizes of these spaces would depend on the requirements of the program. Some areas would not have to be duplicated if they are part of the facilities for the nursing program.

The health area should be accessible by service roads (which would be student walks) and there should be space for emergency or service vehicles to park near the entrance. In planning this area, the same general considerations should be followed as mentioned in some of the previous sections.

PLANNING THE COMMUNITY COLLEGE BOOKSTORE

The community college bookstore should be located in the student center. The bookstore's environment and services should be consistent with the educational objectives of the community college. Its rich supply of good books and art forms should help the student to acquire a feeling and sense for culture by placing its tools within his grasp.

The college bookstore should be a self-service type of operation and might be considered a "supermarket in miniature."

As a minimum, the community college bookstore should include: (1) main sales room; (2) checkout areas; (3) work-storage room(s); (4) manager's office; and (5) service vestibule.

Since the bookstore is normally a combination variety store and bookstore, there should be several methods for displaying materials. Most items such as textbooks, paperbacks and other instructional supplies can be displayed or stored on or in shelves, bins, racks, glass counters and storage cabinets. Small and expensive items such as drafting instruments, slide rules and jewelry should be kept in separate cases and handled by bookstore personnel. Aisle space should be wide enough and checkout counters should be located for easy access by large numbers of students during peak periods. Like all areas in the community college, the bookstore should have movable furniture and space for rearrangement of displays and fixtures. Traffic patterns within the store should be carefully planned to prevent congestion. Lighting and other conditioning factors in the bookstore should make efficient operation of the area possible.

Several checkout counters should be provided at the **one exit** (aside from emergency exits) from the bookstore. Since there are no resident students, it is not necessary to provide display and storage space for notions, toilet articles and other items that would be needed by such students.

SHRINKING SPACE

The amount of space required in the college bookstore should be determined by the initial and future enrollment of the college. A rule-of-thumb figure for determining the amount of space allocated could be two square feet per full-time student enrolled at the college. In the past few years, community college bookstores have rapidly become obsolescent. This is due more to the deluge of vast numbers of paperbacks which have become available than to lack of foresight on the part of planners. Some new community colleges are allocating 25 to 50% of main salesroom floor area for the location of paperback book displays. If used books are to be sold at certain periods of the year, this could be provided for with a special window and receiving area.

OTHER FACTORS

The service vestibule in the bookstore should contain self-service lockers where students can leave their personal items (textbooks, briefcases, etc.) before going into the store.

The college bookstore should have a loading dock for delivery of supplies and should be easily reached by a service road.

PLANNING THE COMMUNITY COLLEGE LIBRARY

SCOPE

The community college, no matter how well planned with regard to program or instructional facilities, cannot accomplish its objectives unless it has a well equipped, functionally designed and broadly supplied library. In order to accomplish this goal it must carry the materials necessary for proper operation of the instructional program and to meet the individual needs of both faculty and students.

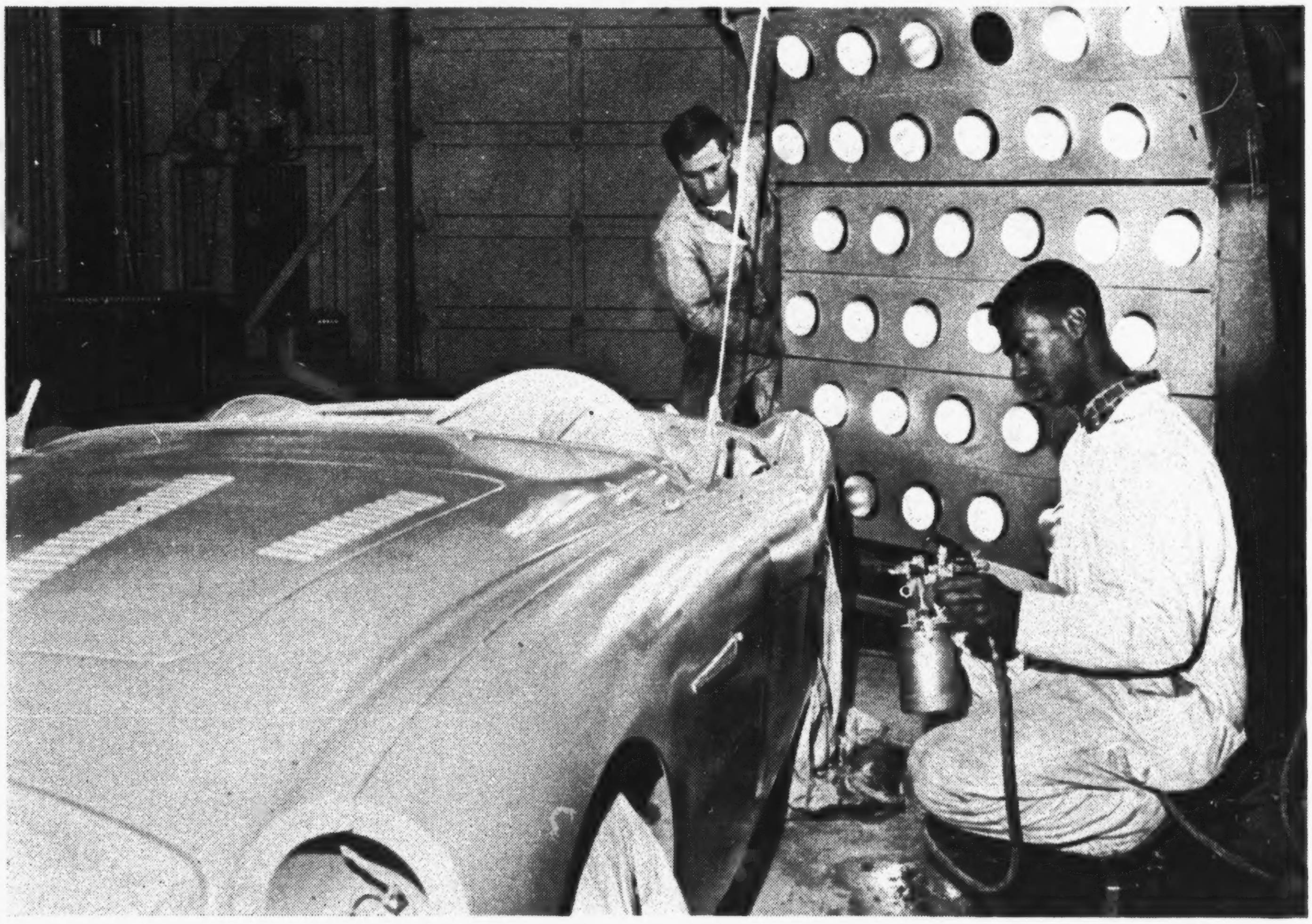
In recent years, the community college library has grown from a mere repository of books and other publications to a virtual storehouse for many types of heretofore unknown or little used instructional aids and materials. It has become the center for curricular materials and the chief focus for the community college's cultural existence. Microfilming has enabled decades of information to be stored in miniature, so that it can be saved and used by present and future generations.

More recently, the library has become the center for campus communications. Taped audio and/or visual media in the age of electronics have enabled the library to "pipe" its materials to all facilities on the campus, there to be used by the individual as well as the group.

The collection of materials in the community college library should be organized and carefully selected to properly supplement the teaching program. Like all areas in the school plant, the library should be designed with the individual student in mind. The library's physical environment should motivate learning. It should have built-in safeguards to allow individuals or groups to work without distraction caused by design difficulties or by other individuals. It should be so designed that its structure helps to control conduct of students. All the forces of good architecture should be brought to bear to help realize the objectives of the library program.

LOCATION

The community college library, the physical and resource hub of the campus, should be located at or near the physical center of the building group. Centrality of location is extremely important since it must be convenient and directly accessible to both students and faculty. Access to the library should be guaranteed by properly positioned walks.



Students in all curricula find use for the library.

SIZES OF RESOURCES

The community college library should probably be larger than that of a comparable-sized four-year liberal arts college. This is essential because a greater amount of materials is needed to maintain the diversified programs offered by a comprehensive community college.

Because of its larger enrollment, as well as its broader program, the community college library should be much larger than any library found on the secondary school level. Listed are some of the types of materials which should be made available; provisions must be made for their display, storage and use in designing the facilities within the library.

1. Reference books (a minimum collection of 200-300 titles)
2. Circulating books (including multiple copies of widely-used materials.)
3. Current and bound periodicals
4. Audio and television tapes, slides, films, records, "flats," and other audio-visual materials.
5. Special collections (maps, music, manuscripts, rare books, pamphlets, broadsides, etc.)

The community college library must be able to accommodate the materials which are essential to the proper operation of the instructional program. A universal standard based on the number of resource materials would **not** be valid, since it should be the quality and usefulness of the materials, rather than the quantity available to both students and staff. However, some authorities agree that a community college cannot perform its function unless it has at least 20,000 carefully selected volumes. Multiple copies of widely used materials would also have to be provided. It might be pointed out that the broader and more diversified the program, the larger the need for a wide assortment. In order to open a new library with sufficient materials, many wise community college administrators have made the basic collection of books, periodicals and other materials **capital outlay items.** It should be noted that the cost of each book in the core collection is generally between five and six dollars. The specialized texts needed for technical curricula are more expensive. An adequate basic book collection, reference collection and audio-visual materials collection, as well as a selection of periodicals are indispensable if the community college library is to serve its real purpose.

In planning, provision would also have to be made for normal growth of resources. Some community college librarians feel that the collection should be enlarged by 5,000 volumes for every 500 full-time equivalent students beyond 1,000. A basic fact that must be kept in mind is that the community college library can depend on local public libraries **only** for supplementary support.

SIZE OF THE LIBRARY

The size of the area needed for the library can be determined only by listing all essential areas and scheduling the amount of space and equipment required for each. This must be done area by area, clarifying such needs as book storage requirements, seating capacities, number of work stations, special equipment needs such as card catalog, atlas stands and other items of equipment. This schedule would then become the basic guide for interior planning. As noted in a previous section, "Planning Community College Buildings," the library should follow the concept of open planning with a minimum of load-bearing partitions. This is one of the few ways of providing for unforeseen uses of the library.

Supervision in most libraries has always been a problem. Line of sight supervision is most desirable but often impossible. Several libraries have installed television cameras for monitoring remote areas of the library. "Acoustical alarms" have also been installed in some areas to warn the librarian of disturbances that occur. This can be tied in with television monitoring and can be controlled from a central location. The use of individual carrels rather than group tables has reduced the problem of supervision and noise in several college libraries.

Although the planning of each library depends on its particular program, there are certain features which are applicable to most good libraries. Two of these are: (1) a single lending desk should be designed and located to control as many entrances as possible; (2) there should be a single processing room for reference, circulation, etc. A rule-of-thumb figure in planning libraries is provision for at least 25-30 square feet per reader exclusive of stack and work areas. The higher figure is more desirable if student carrels or individual work tables are used almost exclusively. Since the entire book acquisition program must be kept in mind in planning the library, the following formulas might be used for estimating the space required for books. They are: (1) fifteen volumes per square foot of floor space; (2) two volumes per cubic foot, if the standard seventy-six inch high books are used; (3) six books for a running foot of shelf; and (4) 126 books for a three foot section which is seventy-six inches high.

AREAS USED BY STUDENTS

Before the educational specifications for the library can be set, certain basic decisions must be made concerning (1) the seating capacity of the library; (2) the type of seating, specialized equipment and work surfaces that are most desirable; and (3) the types of library services that are to be rendered. In designing the library, care should be taken so that the following types of areas are provided as a minimum for use by students: (1) reading and work areas (individual and group); (2) informal reading areas; (3) circulation areas, including card catalog, checkout area. etc.; (4) open shelf areas; (5) conference rooms; (6) reference room(s); (7) current periodicals area; (8) typing rooms; (9) audio-visual listening, recording and viewing areas (including closed circuit television); (10) special collections areas; and (11) rest rooms.

AREAS FOR FACULTY AND STAFF

The location, size and adequacy of the operational areas provided for the staff will be a deciding factor in the efficiency of the library's operation. The location of checkout areas, offices, public card catalogs, reference areas, processing rooms, and storage areas should permit smooth operation of the library. In addition, rest rooms for the staff should be provided.

SEATING CAPACITY

The seating capacity of the library should be determined by the number of students enrolled at the college. A suggested minimum is seating for twenty-five per cent of the full-time enrollment of the college.

All furniture in the library should be movable or semi-fixed and arranged for maximum supervision by the library staff. **Most** student reading areas (ninety per cent or more) should have individual study tables or carrels. Tables for group seating should be limited mainly to conference rooms scattered throughout the library. However, special collections rooms should have provisions for single and group seating. All shelving in the library should be semi-movable and capable of each adjustment by hand without the need for special tools. It would also be desirable to have adjustment holes or fittings numbered to facilitate proper alignment.

All materials in the library should be available, directly or indirectly, to both students and staff. In addition, all areas of the library should be opened to the student except operational and processing areas. However, permission should be required to use special collection areas. Although there might be special locations for particular types of materials, the type of study areas needed by students enrolled in the various curricula within the community college is the same. Most of the public areas within the library should be available for "browsing" and all stacks (open shelf areas) should be open for use by students.

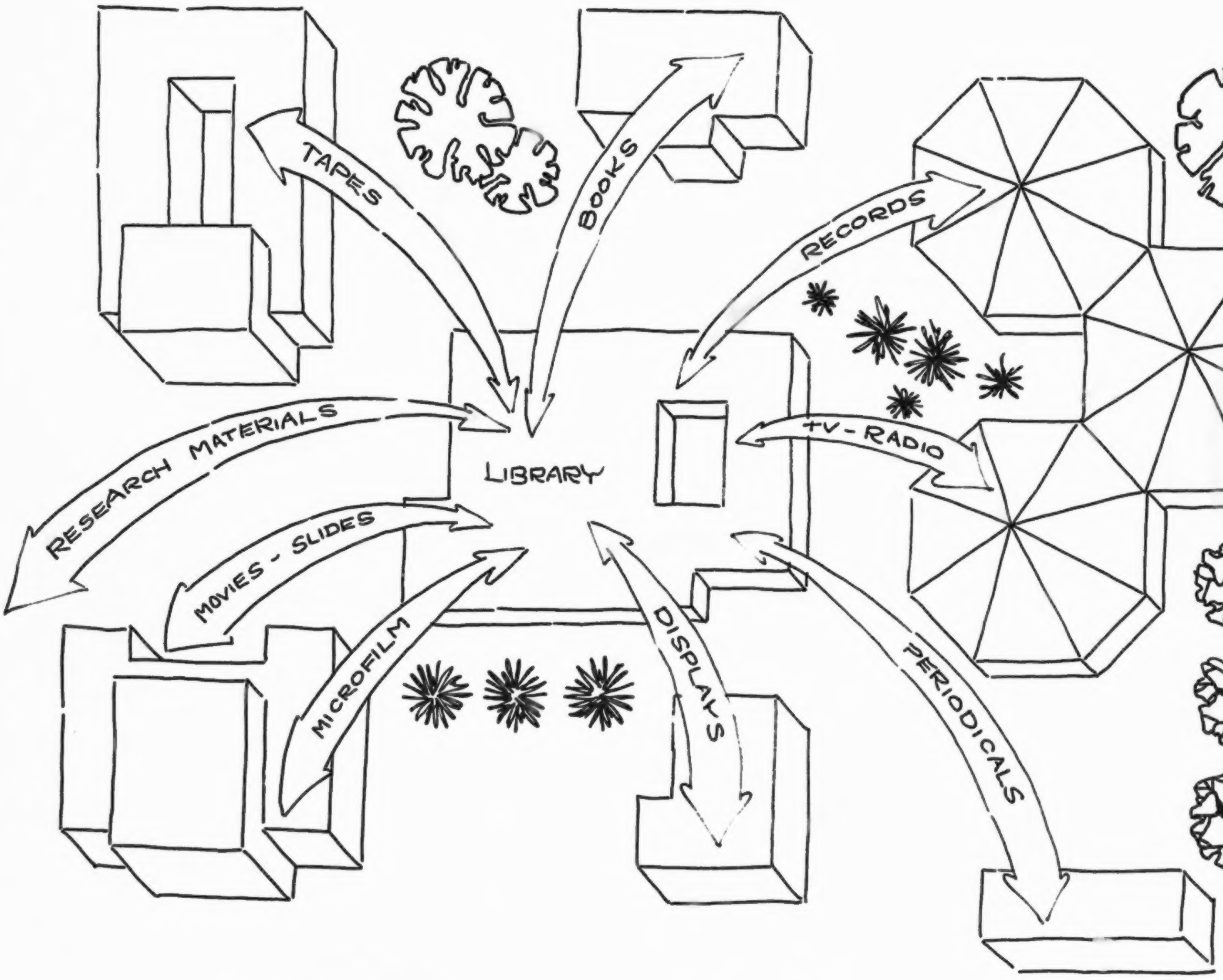
Provision will likely need to be made for operating the library when other areas of the college are closed; and ease of public access, adequate control and availability of telephone services and utilities must be planned. It would also be desirable to have the library open at least one hour before and after the last scheduled class .

MOVEMENT OF MATERIALS

Movable carts and tables, elevators, dumbwaiters, pneumatic air tubes, conveyor belts and other devices can be used for more efficient movement of materials within the library. The types and numbers of these should be decided by the scope of services rendered. However, libraries which have two or more floors (or levels) should have one or more elevators and some provisions for vertical movement of materials. A bookdrop should be located near the closest parking lot so that books can be returned when the library is closed. The size of the bookdrop opening should be large enough to receive large sized books.

LIGHTING

Book stacks should not have separate lighting fixtures. Overhead lighting should be sufficient to enable all materials to be properly displayed. Use of polarized lighting should be explored because of its excellent visual qualities. Special care should be given to lighting in the library. There should be more emphasis on brightness balance and proper luminaires than on sheer candle power. An illuminated ceiling would probably be the most desirable type of lighting system. It should be remembered that the coloring of the ceilings, walls, floors, tables, desk tops and other objects in a space contribute to the caliber of the visual environment. Care should be taken to select colors that provide not only a proper brightness but that are psychologically desirable as well.



The Library . . . the resource center for many tools of learning . . .

AUDIO AND VISUAL STUDY AREAS

The library should have both individual and group audio-visual learning centers. Some of the individual learning centers can be incorporated into specially designed carrels. Any audio and/or visual material desired should be "piped" into the individual learning center from the tele-communications studio. Individual requests could be made by intercom from each learning center (or from music listening rooms in the student center) to the tele-communications studio. The vast amount of visual materials available, since the advent of the movie projector, should not be allowed to go unused. The use of documentary films and outstanding television dramas, as well as the wealth of slides, film strips and other audio and visual media that are available for learning and can be placed on tape, should not be impeded by a lack of sophistication and foresight by college planners. A nation that can project pictures from a satellite orbiting in space should **not** allow more than 50 years of visual and audio materials to remain largely unused.

All individual audio-visual learning centers should be located in areas designated by library personnel. However, if a number of service lines (coaxial cables, audio lines, etc.) are programmed for these areas, they should be grouped for ease of maintenance and economy. Both group and individual centers should be located for easy access to audio-visual service rooms.

The number of visual and/or audio stations is determined by the college's program, but should be flexible so that services can be added, updated or relocated. This can be accomplished by having all or part of the floor designed as indicated under "Planning Community College Buildings."

TELE-COMMUNICATIONS STUDIO

The library should house the community college's tele-communications studio. Taped or live television and audio (radio, records, tapes, etc.) presentations should be available from this facility to any instructional area and selected activity areas on campus. In some areas, campus activities or concerts can also be broadcast to the surrounding community. The studio should have separate recording, presentation, repair and storage areas. Lighting and electrical requirements for the different types of live presentations should be adaptable for changes in the types of presentations and for equipment yet to be designed. Television studio areas should have the necessary services for the presentation of live classroom situations with adequate space to seat a few students so that televised teaching is not sterile and is geared to a living audience. The use of such a central tele-communications facility will lessen the need for bulky movie and slide projectors and other sensitive audio-visual apparatus being carried from classroom to classroom. This also eliminates the need for many trained operators who are often difficult to schedule. An instructor would be able to schedule or "phone for" an audio and/or visual presentation and have it programmed to any instructional facility on campus.

A darkroom near this area could be used by tele-communications personnel as well as the community college's public relations department.

CONFERENCE ROOMS AND SPECIAL COLLECTIONS AREAS

The library should have a number of conference rooms, varying in size, which can be readily supervised by the staff. Smaller conference rooms should have seating for at least six students, while large ones should be capable of seating a maximum of fifteen students. The larger conference rooms should double as general purpose classrooms (seminar rooms) if, or when, needed. Group seating furniture (rectangular or trapezoidal tables) should be programmed for the conference rooms and special collection areas. It would also be desirable to have individual seating in the special collections room(s).

Books are used everywhere . . .

TYPING CUBICLES

The library should have small, enclosed (soundproof) typing spaces for one, two, or three persons. These should be based on one space per fifty students of library capacity.

A rule-of-thumb to use in computing the amount of space required for conference rooms and typing areas is at least thirty-five square feet per person. It is important that all typing stations include writing surfaces.

READING AREAS

All reading areas in the library should be informal. Large reading areas could be separated into clusters by the use of bookshelves.

carrels and other pieces of library furniture. The mass effect of large stereotyped reading rooms should be avoided. Several studies have shown recently that most college students would rather study using individual carrels or study tables than work at large group tables. Lounge furniture should be located throughout the library reading areas and between open stacks. It is suggested that single seat lounge pieces be purchased since large units usually have poor utilization. It is also desirable to have tops of student writing surfaces covered with a textured, melamine or other nonglossy and durable surface.

For purposes of supervision, glass partitions should be used in some areas of the library particularly in conference, special collection, listening and typing rooms. These partitions should be capable of rearrangement if the size or need for such spaces changes.

FACULTY AREAS

The library should have provisions for a professional library and reading area for members of the faculty. Adjacent to this should be several small carrels or conference rooms for individual faculty members to do research. These should be located near a special entrance so that they can be used during hours that the library is closed. Most conference areas could be utilized by students when not reserved for a faculty member. In addition, the library should have adequate offices for the library staff.

LOCKERS AND PERSONAL ITEMS

Self-service lockers should be located in the library lobby where students can place any large personal items such as coats which they do not want to carry into the library. Study carrels might also be provided with drawers where students can keep some of their study materials.

A classroom for teaching the use of the library, although useful, would be poorly utilized. Conference rooms or other classrooms could be used for this purpose.

Outdoor patios are also learning areas . . .

CIRCULATION DESK

The main circulation desk should be located near the entrance to the library. It would be desirable to have a turnstile in this area. The size and type of circulation desk should be determined by the library staff.

SERVICE ENTRANCE AND OTHER STORAGE

The library should have a separate service entrance for the delivery of books and supplies. This entrance should be located near the new book and repair processing centers. Most storage space for supplies should be located near appropriate work stations and should include adjustable book shelving. In the library, any storage cabinets should be capable of being moved.

TELEPHONES

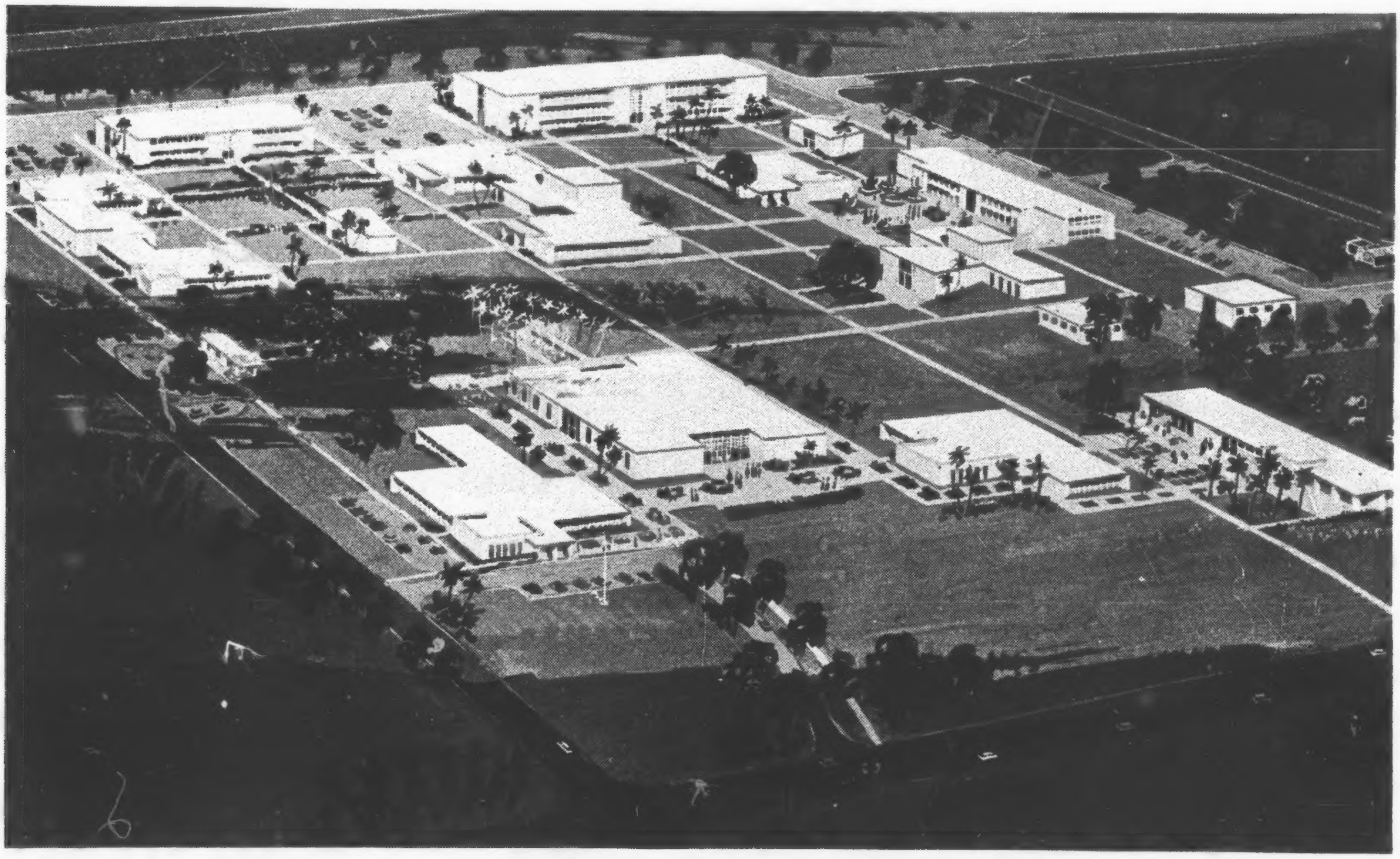
Telephones should be generously supplied in the library for use by the library staff. In recent years, the telephone has become an indispensable "working tool" for the librarian and it should be suitably located in most of the work areas and offices. There should also be provisions for public telephones in or near the library building.

MORE ESSENTIALS

All essential services that are required by the library should be available. Air-conditioning, in addition to contributing to pupil and staff comfort and efficiency, is also necessary for the preservation of pulp materials. Dust and uncontrolled humidity are responsible for slow deterioration of valuable and sometimes irreplaceable instructional and resource materials.

Carpeting should be the basic covering for the library floors. In addition to its durability and ease of maintenance, it is an excellent acoustical material.

A small parking area for delivery of supplies, books and other materials should be located adjacent to the library with adequate receiving facilities. This area should be reached by service road or tunnel.



Clearwater Campus
St. Petersburg Junior College
Clearwater, Florida

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

JC 67-0035

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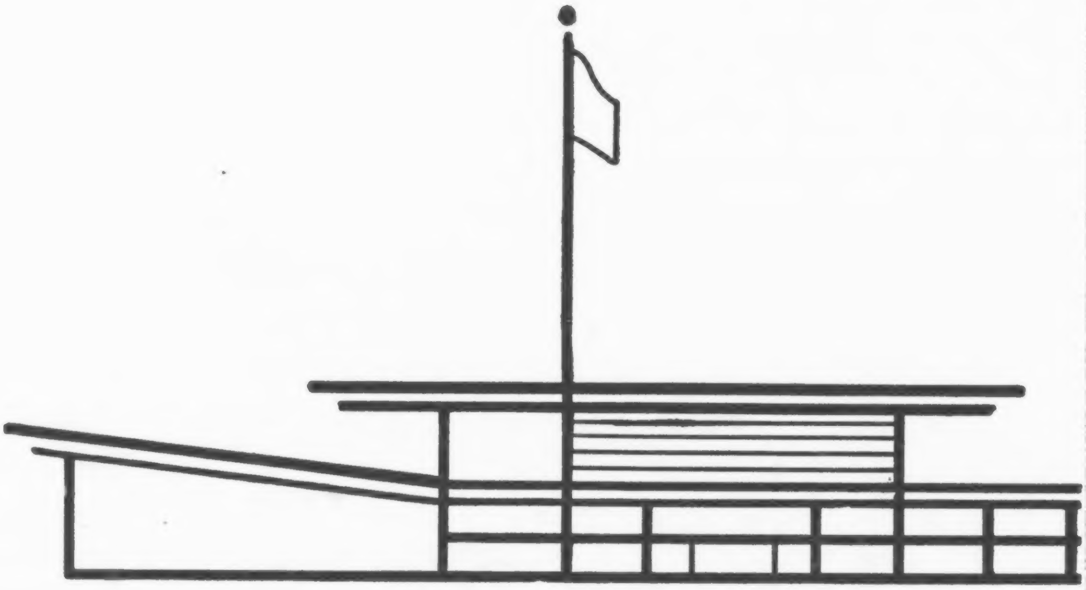
A CHECKLIST FOR PLANNING COMMUNITY COLLEGE FACILITIES



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NEW BRUNSWICK, NEW JERSEY*

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JC 67-0635

A
CHECKLIST
FOR PLANNING
COMMUNITY COLLEGE
FACILITIES

FRANK P. MERLO

UNIVERSITY OF CALIF.
LOS ANGELES

JAN 06 1967

CLEARINGHOUSE FOR
JUNIOR COLLEGE
INFORMATION

THE DIVISION OF FIELD STUDIES AND RESEARCH
GRADUATE SCHOOL OF EDUCATION
RUTGERS-THE STATE UNIVERSITY
NEW BRUNSWICK, NEW JERSEY

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COMMUNITY COLLEGES FACILITIES PROJECT
DIVISION OF FIELD STUDIES AND RESEARCH
GRADUATE SCHOOL OF EDUCATION
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CHECKLIST FOR PLANNING COMPREHENSIVE COMMUNITY COLLEGE FACILITIES

This list is presented as a suggested guide for questions to be considered in planning comprehensive community college facilities.

The various types of curricula in a comprehensive community college indicate the necessity for close cooperation of instructional personnel, administrators, citizens committees, boards of trustees, architects, and outside school planning consultants to secure functional facilities that will serve the educational program. Although the final responsibility for planning the community college plant rests with the board of trustees and the college administration, it is essential that both lay and professional assistance be sought to plan this unique type of educational plant.

Comprehensive community colleges usually offer three distinct types of programs, but specific course offerings are usually determined by local needs. The three educational programs usually offered are:

1. Transfer (or university-parallel) curricula -- where students select pre-professional and or liberal arts courses for transfer to schools offering the bachelor's degree.

2. Technical curricula -- where students prepare for semi-professional employment in fields associated with industry, business, health, and agriculture. These programs are usually considered terminal, since students frequently enter employment upon graduation.

3. Continuing education programs -- this program is principally for adults seeking education beyond high school. This program enables adults to resume interrupted educational objectives or pursue studies of a cultural or personal enrichment nature. Adults seeking retraining to pursue new occupations or to improve their present job competence might be enrolled in this

area. Such programs might not vary markedly from the regular transfer or technical curricula.

Although the objectives of these curricula are widely recognized and generally accepted, each college has the responsibility for determining its own specific objectives. The degree of emphasis will vary from college to college in accordance with the educational needs of the geographic area it serves.

It should be remembered that in any planning process for community colleges, physical facilities are only an adjunct to the instructional program. Any types of physical facilities that evolve should be based on who is to be taught, what is to be taught, how it will be taught, when it is to be taught, and how this space can best serve and arrive at the teaching objectives that are a part of the school's philosophy. Unless the proper physical facilities are constructed, the scope of the program and the operation of the college will be handicapped.

PLANNING THE COMMUNITY COLLEGE SITE

Selecting a site for a proposed community college can be one of the most important decisions in planning. Whether the college is to be located in an urban, suburban, or rural setting; its location, size, and distinguishing characteristics will influence present and future development as well as the types and aesthetics of the facilities planned. Certain decisions regarding instruction and student policies will be determined by the site selected. The importance of site selection cannot be over-emphasized. Site selections should be based on such considerations as utilization, master plan developments and improvements expected, rights-of-way, accessibility, environment, size and shape, topography, soil and drainage, zoning, and nearness to essential services such as sewers, electricity, water and gas.

The following are examples of typical questions that might be asked and should be answered before selecting or planning a comprehensive community college site.

1. At what time in the planning stage should site selection be considered?

2. How close to the center of population should the site be?

3. How does the college philosophy affect the size of a campus?

4. What formula should be used to determine the size for a community college site?

5. How may future size of site needs be projected?
6. When should additional site(s) be purchased?
7. What should be the minimum full-time enrollment of a comprehensive community college?
8. What should be the maximum full-time enrollment of a comprehensive community college?
9. What is the best shape for a community college site?
10. What will happen to the value of real estate surrounding the community college?
11. Should community colleges be located in industrial areas?
12. What are considered the best "neighbors" of community colleges (private housing, churches, business districts)?
13. Should certain zoning regulations be adopted before the site is selected?
14. Where should play areas be located?
15. What essential outdoor areas must be considered in a community college campus?
16. What should be the relationship of buildings to the site?
17. What percentage of the site should be covered by buildings?
18. Where should parking lots be located?
19. What formula should be used to calculate the number of spaces needed?
20. Should there be separate parking lots for faculty and staff?
21. Should there be special parking facilities for visitors? If so, where and how many spaces?
22. Should there be special spaces for compact cars?

23. How can the "mass effect" of many cars in the parking lot be made more aesthetically desirable?

24. In urban areas, where can students park while attending classes?

25. Should parking lines be spaced at 45° angles?

26. What building should be directly accessible to private cars?

27. Should parking lots be illuminated at night? If so, to what degree?

28. Where should the luminaires be located?

29. Should vehicular roads, other than service roads, be allowed among the buildings?

30. What should be the width of the service roads?

31. Can service roads also double as student walks?

32. What should be the width of the access roads? Where should they be located?

33. What should be the nature of the topography?

34. Is seepage and flooding from nearby areas a problem?

35. What should be the nature of top soil and sub-soil?

36. Should certain trees be fenced off before construction begins to save them from destruction?

37. What should be the width of the main student walks?

38. What are some of the main sources of noise that are disturbing to the instructional program?

39. What acoustical barriers should be considered in site selection?

40. What consideration should be taken to cutdown on wind exposure?

41. What type of landscape program should be initiated?

42. What provisions should be made on or near the campus site for bus transportation?

PLANNING COMMUNITY COLLEGE BUILDINGS

The following are examples of typical questions that should be posed before planning the buildings that are to be constructed on a community college site. Any questions asked should keep the ultimate size of the community college in mind.

43. What basic buildings must be on every community college site?

44. What building(s) should be constructed first if you are forced to build only one or two at a time on a new campus?

45. What building should be kept apart from the rest of the complex?

46. Should academic departments be housed in separate buildings?

47. Should there be certain zones for certain types of buildings (example: administrative zone, instructional zone, parking zone) to allow for added expansion or addition of certain types of facilities?

48. What plan (compact, cluster, finger, campus, etc.) is the most desirable for the physical plant of the college?

49. What is the most desirable orientation of certain buildings to each other?

50. What type of orientation pattern is the most desirable?

51. What are some of the dangers in the orientation of buildings?

52. What is a way to prevent "boxing-in"?

53. What should be the basic orientation of the buildings with regard to sunlight?

54. How should the insides of buildings be designed for flexibility?

55. Where should folding partitions be used to make space flexible?

56. What provision should be made for rearranging of space?

57. What is the most desirable orientation of buildings in an "inner-campus" located on a small site?

58. How is the noise that emanates from the surrounding area controlled on an "inner-campus"?

59. How is the open core utilized in an "inner-campus"?

60. Where are the athletic fields placed in an "inner-campus"?

61. Are enclosed walkways between buildings necessary?

62. Are patios desirable between buildings? If so, what should be their function and what should they look like?

63. Should ramps or stairs be considered for the entrances into buildings?

64. What buildings require loading docks?

65. What buildings should have dumb-waiters or freight elevators?

66. Are separate heating systems more desirable than central heating systems? Why?

67. What facilities should be available for use by community organizations?

68. How much window area is desirable in buildings?

69. What "rule-of-thumb" figure should be used for determining lounge spaces?

70. In what buildings should lounges be provided?

71. What types of building facilities are necessary for the outdoor maintenance program?

72. What types of telephone services are required for intra-campus communication?

73. Should service lines within buildings be planned for future expansion, even though, at the time of construction, no expansion is planned?

74. Should all areas have separate heating and air-conditioning controls?

75. What facilities on the campus should be air-conditioned? (List in order of importance.)

76. Is a public address system essential to a community college?

77. Should there be a bell system for the entire campus?

78. Are control clocks necessary?

79. What areas should have clocks?

80. What special provisions should be made in facility planning for the evening program?

81. Should building exteriors be illuminated at night?

82. What areas on the campus should be fenced?

83. Where should public telephones be located?

84. Where should vending machines be placed on the campus?

85. What type services should they offer?

86. Where and in what building should smoking be allowed?

87. Can corridors be used for other purposes?

88. Should parking guards be employed? If so, how many?

89. How can parking lots be controlled by built-in devices?

PLANNING COMMUNITY COLLEGE GENERAL PURPOSE INSTRUCTIONAL AREAS

Community college instructional spaces are of two categories, (1) general purpose instructional areas, and (2) special purpose instructional areas. Special purpose instructional facilities have a unique role since they are usually designed with a specific teaching-learning situation in mind. The general purpose instructional areas are much more flexible and can be used to teach a variety of subjects. The questions listed below should be answered before planning the general purpose instructional areas which will be used for some of the following subjects:

- English
- Science Theory
- Economics
- Psychology
- Geography
- Law
- Art Theory
- History
- Education
- Engineering Theory
- Shop Theory
- Speech
- Mathematics
- Sociology
- Anthropology
- Foreign Languages
- Programming Theory
- Health
- Political Science
- Literature
- Business Administration
- Business
- Music Theory

90. Should there be provisions for small and large group instruction?

91. Should small general purpose instructional rooms with a maximum capacity of fifteen students be programmed?

92. What subjects can be taught in these areas? List.

93. What should be the ratio of small areas to large areas?

94. If classrooms are of varied sizes, what should be the typical capacity of each of these varied types of classrooms?

95. What are the suggested sizes for these instructional spaces?

96. How do you arrive at the recommended sizes of the various types of general instructional areas?

97. Should the type of student seating purchased make a difference in the size of instructional spaces?

98. What type of student seating should be considered in making these estimates?

99. What formula should be used to determine the number of general purpose classrooms required?

100. Where should general purpose instructional areas be located?

101. What changes in the types of classroom seating are needed?

102. How much display area (chalkboards, pegboards, tackboards, etc.) is necessary for general purpose instructional areas?

103. What formula should be used to determine the number of specialized instructional spaces?

104. What should be their utilization factor?

105. Should it be the same for small and large areas?

106. Are Heidelberg lecture halls recommended?

107. What kind of storage spaces are required in the different types of instructional areas?

108. What provisions should there be for audio-visual aids?

109. What special color treatment is recommended for these areas?

110. What types of mechanical services (plumbing, heating, air-conditioning) are needed for these instructional rooms?

111. What special electrical requirements, such as outlets and special lighting, should be considered? Where located?

112. What facilities will be used for just one type of activity, or more than one?

113. What facilities can simultaneously be used by more than one group?

114. What provisions for future expansion of instructional areas should be considered?

115. What provisions for flexibility in instructional areas should be considered?

116. Should racks or cloak rooms be provided for coats and hats?

117. What type of regular classroom facilities or laboratories requires library corners for ready reference?

PLANNING SPECIAL PURPOSE INSTRUCTIONAL AREAS FOR THE COMMUNITY COLLEGE

Special purpose instructional areas differ markedly in physical appearance and function, but basically the same questions can be asked in order to determine their different characteristics.

The questions listed below should be answered in planning the following types of special purpose instructional areas:

Art laboratory (ceramics)
Art laboratory (drawing)
Art laboratory (painting)
Art laboratory (sculpture)
Art laboratory (crafts)
Foreign language laboratory
Reading laboratory
Journalism laboratory
Photography laboratory
Instrumental music room
Choral music room
Accounting room
Bookkeeping room
Typing room
Office machines room
Data processing laboratory
Physical Education facilities
Home economics laboratory
Biology laboratory
Botany laboratory
Bacteriology laboratory
Anatomy laboratory
Geology laboratory
Zoology laboratory
Physics laboratory
Chemistry laboratory
Organic chemistry laboratory
Surveying laboratory
Drawing laboratory
Engineer testing laboratories
Glass tech. laboratory
Tele-communications laboratory

118. What subjects will be taught in these areas? List.

119. Can regular classrooms, seminar rooms, and large group areas be used for these subjects?

120. Where should vocational-technical areas be located?

121. Where should this specialized instructional area be located in relation to the other facilities on the campus?

122. What formula should be used to determine the number of these?

123. In what building(s) should these specialized facilities be placed?

124. Next to what other department should this area be located?

125. Can this facility be shared by other departments?

126. Can this special facility be used by (1) technical-vocational, (2) university parallel, and (3) general subjects?

127. Can it be used or adapted to the evening program?

128. What figure should be used to determine the square footage of this area?

129. What is the pupil capacity of this area?

130. What is the approximate utilization factor of this area?

131. What types and sizes of other special rooms are necessary to supplement this area?

132. What "rule-of-thumb" figures should be used to determine their square footage?

133. If a laboratory, should it have a special lecture area?

134. If a laboratory, how should lecture area be separated from the work area?

135. If a laboratory, what type of special electrical services are recommended (distribution panels or portable units)?

136. What types, sizes, and number of storage spaces should be provided? Should they be built-in, movable, or both?

137. What should be the ceiling height of this area?

138. Is a direct outdoor exit essential?

139. Is a special size and type of door necessary?

140. What type of hardware should be considered?

141. How much display area (chalkboard, tackboard, etc.) is necessary?

142. What type and intensity of lighting is recommended?

143. Will dimmer controls be required for lighting?

144. What other special type of other lighting is necessary?

145. What types of electrical services (outlets, voltage demands, etc.) are needed? Where should they be located?

146. How much fenestration is necessary in this area? What type, if any, should it be?

147. What provisions should be made for audio-visual aids?

148. Is complete "blackout" essential?

149. What special color treatments are recommended?

150. What type of plumbing services are required?

151. What type and volume of ventilation is required?

152. What type of special exhaust ventilation is essential?

153. Should this area be air-conditioned?

154. What other type of essential service lines will be required?

155. Should provisions be made to expand service lines?

156. How can additional service lines be installed after the building is completed since lines are normally imbedded in the floors and walls?

157. What type of temperature controls are necessary?

158. What types of furniture and or fixed equipment should be provided?

159. How should it be "laid out"?

160. Should individual lockers for student projects or personal items be provided?

161. Should there be racks for coats and hats?

162. What special acoustical properties are essential?

163. What special ceiling, wall and or floor properties are recommended?

164. Should a separate area be required for resource materials?

165. Should movable partitions be provided?

166. Should smoking be permitted?

167. What important safety factors must be considered in planning this area?

168. What special structural considerations should not be overlooked?

169. Should drinking fountains be provided within this area?

170. Should toilet rooms within this area be considered?

171. Should faculty offices within this area be considered?

172. How does this area differ from its counterpart on the high school or four-year college level?

173. Should parking facilities be directly adjacent to this area?

174. What other types of special purpose areas which are not included in the list should be planned?

PLANNING THE COMMUNITY COLLEGE DRAMA DEPARTMENT

In planning the drama department, the same questions that are listed in the previous section entitled, "Planning Special Purpose Instructional Areas for the Community College," should be asked. In addition, the following questions should be asked because of the specialized nature of the facilities.

175. What types of stage facilities are necessary?

176. Where should they be located?

177. What is the desirability of the various types of stages?

178. What is the desirable size of these stages?

179. Should the college have an auditorium and/or a little theatre(s)?

180. What type of audience seating should be provided for the various types of stages?

181. What should be the audience seating capacity of these areas?

182. What types of instructional spaces make up the drama department?

183. How many locations on campus should be provided for dramatic productions?

184. Where should they be located?

185. Should the college auditorium be managed by the drama department?

186. What is a "rule-of-thumb" for seating capacities for the community college auditorium?

PLANNING THE COMMUNITY COLLEGE STUDENT CENTER

187. What are the purposes to be served by this facility?

188. Where should the student center be located?

189. What are the types and sizes of areas that are needed to accommodate the services of the center?

190. Should all of the student lounges be located in the student center?

191. What provisions for student government offices should be considered?

192. What other types of offices should be located in the student center?

193. Should the student cafeteria and snack bar be located here?

194. Should the student cafeteria be in one large room?

195. Is a separate snack bar and cafeteria hot tray areas necessary?

196. Should all vending machines be located in the student center?

197. What types of provisions for serving meals should be considered (lunches, snacks, banquets, full-course dinners, etc.)?

198. What is the best type of hot tray service area?

199. Should there be separate faculty dining rooms in the center?

200. Should a separate faculty dining area be located in the student center?

201. Should the faculty use the same service lines as students?

202. What other type of dining facilities should be in this area?

203. **How long should food service facilities be available to accommodate the evening program students?**

204. **What types of display areas should be located in the student center?**

205. **In designing the student center, what area should be given careful attention?**

206. **How should lounge furniture be placed?**

207. **Where should each functional area of the student center be located in relation to the others?**

208. **Are music listening booths, little theatres, T-V rooms, and game rooms part of the center's facilities? If so, where should they be located and what size should they be?**

209. **Should there be special provisions for parking and servicing the student center?**

210. **What administrative and operational offices should be located in the student center?**

211. **Can the student center be used for part of the instructional program?**

212. **Should any general purpose or special purpose instructional areas be located in the student center?**

213. **How can the student center be used in conjunction with the art and drama departments?**

214. **Has provision been made for student lockers or mail boxes for both day and evening programs?**

215. **What other storage areas are necessary in the student center?**

216. **Should the student center have study areas?**

217. **Are game, television rooms and music listening booths part of the student center?**

218. What other special services or considerations should be given to the student center?

PLANNING THE COMMUNITY COLLEGE ADMINISTRATIVE FACILITIES

219. Where on the campus should the administrative facilities be located for the most efficient service?

220. For which administrators are individual offices needed?

221. What should be the size of the individual offices?

222. What conference rooms are needed in this area?

223. What conference rooms should be located in the administrative areas?

224. What should be the size of the conference rooms?

225. Should there be special facilities for registration for both day and evening programs?

226. Should there be a separate waiting area?

227. Should there be special facilities for storing records?

228. What type of communications system should be provided?

229. What types and sizes of spaces are required by the clerical staff?

230. What other spaces are needed for this area?

231. What size should they be?

232. Where should they be located?

233. What are some other factors that should be considered in planning the administrative area?

PLANNING THE COMMUNITY COLLEGE GUIDANCE CENTER

234. Where should the guidance facilities be located for maximum efficiency?

235. Who should have offices in the guidance center?

236. What size and types of offices and conference rooms should be located in this area?

237. What special areas should there be for counseling and testing?

238. What types and size of space are required by the clerical staff?

239. Should there be a separate area for record storage?

240. What other facilities are needed for this area?

241. What size should they be?

242. Where should they be located?

243. Should there be separate parking for the guidance facilities?

244. Who should be authorized to use these parking facilities?

PLANNING THE COMMUNITY COLLEGE FACULTY AREAS

245. What provision should there be for faculty offices?

246. What should be the size of the faculty offices?

247. What is the purpose of each faculty member having an office?

248. Do all faculty members need similar space?

249. What difference, if any, would there be in the size of certain faculty member's office space?

250. Where and how should faculty offices be located? (Near the teaching station, by department, etc.)?

251. What are the functions of a faculty center?

252. What are some advantages of a separate faculty center?

253. What are some important factors that should be considered in designing the faculty center?

254. Are mail boxes or offices provided for both day and evening faculty members?

255. Where would space for clerical personnel be located in or near the faculty offices?

256. Should separate department libraries be established? If so, where and what size?

257. Should there be office space for part-time evening instructional staff?

258. What are some other areas on the campus required by the faculty?

PLANNING THE COMMUNITY COLLEGE CUSTODIAL AND MAINTENANCE FACILITIES

259. Where should the main maintenance facilities be located?

260. Should office space be provided for the maintenance staff?

261. What space provisions should there be for the maintenance and repair of equipment?

262. What should be the size of these areas?

263. What types and sizes of storage space are necessary for the custodial and maintenance staff?

PLANNING THE COMMUNITY COLLEGE STUDENT HEALTH FACILITIES

264. Where should the health suite be located with reference to other campus facilities?

265. How extensive should be the services that are offered?

266. What types and sizes of areas should be provided for health services?

267. What should be the function of the special spaces in this area?

268. Should there be special provisions for parking near the health service center?

269. Should the health suite be included in the special facilities provided for a program in nursing?

270. What facilities can be used by both?

PLANNING THE COMMUNITY COLLEGE BOOKSTORE

271. Where is the most desirable location for the community college bookstore?

272. What type of operation should be considered (self-service or traditional)?

273. What types of items should be stocked?

274. What type of special lighting and services should be considered in this area?

275. Should the bookstore have a loading dock?

276. What are some of the other special services that should be provided by the bookstore?

277. What are some of the other basic facilities found within a college bookstore?

278. How much space is required for each area in the college bookstore?

279. Should space be calculated on the square foot basis or should it be determined by the number of students enrolled in the college?

280. What provisions should be made for built-in controls to offset pilfering of supplies?

PLANNING THE COMMUNITY COLLEGE LIBRARY

281. How is the community college library function different from that of the high school or four-year college?

282. What types of services and materials should be available in the community college library?

283. Where should the library be located?

284. What figure should be used in determining square footage?

285. Is outside parking near the library desirable?

286. What should be the seating capacity of the library?

287. What plans should be adopted for future expansion of the seating capacity?

288. What type of furniture is most desirable and how should it be arranged?

289. What proporation of the reading surfaces should be carrels and where should they be located?

290. How should the number of volumes in a library be determined?

291. What provisions should there be for future expansion of the book capacity?

292. What provisions should be made for the expansion of the library?

293. What types of special study areas, materials and equipment should be provided for the vocational-technical programs?

294. Should the special equipment, materials and services for the vocational-technical programs be separate from the others?

295. What special facilities should there be for instructional staff use?

296. How many volumes, recordings, tapes, films and slides should be housed in the library and how many copies of each?

297. How many periodicals and trade journals should be recommended?

298. How should these be displayed?

299. How can traffic within the library be controlled?

300. How should materials be transported within the library?

301. What types of stack areas are most desirable and where should they be located?

302. How should stack areas be arranged?

303. Should book stacks be movable?

304. Should book stacks have lighting fixtures attached?

305. How much shelving should be required in a library?

306. What are the most common depths of shelving?

307. How long should the library day and week be?

308. What types of audio-visual centers for use by individuals and/or groups are most desirable?

309. Where should these audio-visual centers be located?

310. How much space should be devoted for student audio-visual use?

311. How many listening stations should be provided for audio-visual use?

312. Should the number of audio-visual spaces be determined by the number of students enrolled?

313. What other types of audio-visual services should be rendered by the library?

314. Should there be a darkroom in the audio-visual area?

315. How many student conference rooms should be located in the library?

316. What should be their size?

317. What type and size of typing areas should be located in the library?

318. What "rule-of-thumb" can be used for computing the amount of spaces required for conference rooms and typing areas in the library?

319. What should be the size of the staff and what type of personnel should they be?

320. Where should these personnel be located in the library?

321. What areas of the library should be open to students?

322. Should there be a separate student lounge or should lounge furniture be provided in reading areas?

323. Should the library have movable partitions and, if so, why?

324. What provision should there be for glass partitions?

325. Should faculty carrels or cubicles be provided?

326. Are lockers necessary for storage of materials before students enter the library?

327. Should there be provisions for vending machines? If so, where should they be located?

328. Should there be a classroom for teaching the use of the library?

329. What safeguards should be provided to prevent furniture from being burned by cigarettes?

330. What provisions should there be for hanging coats and hats?

331. Should there be a separate professional library and a reading area?

332. What type of offices and processing centers are desirable and where should they be located?

333. What should be the size of these areas?

334. Where should the main circulation desk be located and why?

335. How long should the main circulation desk be?

336. What built-in controls to avoid pilfering should be considered?

337. Where should receiving areas for materials be placed?

338. Where should library supplies and equipment be stored and in what types of storage spaces?

339. Should public telephones be located in the library?

340. Should there be separate areas for special collections?

341. Where should switches be located?

342. What types of services (water, gas,electric, etc.) should be provided for the library?

343. What types of custodial services are essential and where should they be placed?

344. What provisions should be made for acoustical controls?

345. What types of floors are most desirable?

346. Is it more desirable to have a shipping elevator, a passenger elevator, or a dumb-waiter?

347. What formula should be used to determine the amount of square footage in the community college library?

PLANNING FACILITIES FOR THE COMMUNITY COLLEGE EVENING SCHOOL PROGRAM

348. What special consideration should be given to facilities because of the evening program?

349. Should the entire evening program be operated on the community college campus?

350. At what hours should certain facilities be open to house both day and evening programs and what should these facilities be?

351. What mechanical considerations, such as lighting, ventilating, etc., should be adapted to house an evening program?

352. How much outdoor illumination is necessary and where should it be placed?

353. How much parking is necessary for operating the evening program?

354. What custodial services should be available during the evening program?

355. Can facilities for the evening program only be justified? If so, what facilities?

356. What should be the educational environment for a comprehensive community college?